

*Right for today,  
ready for tomorrow*

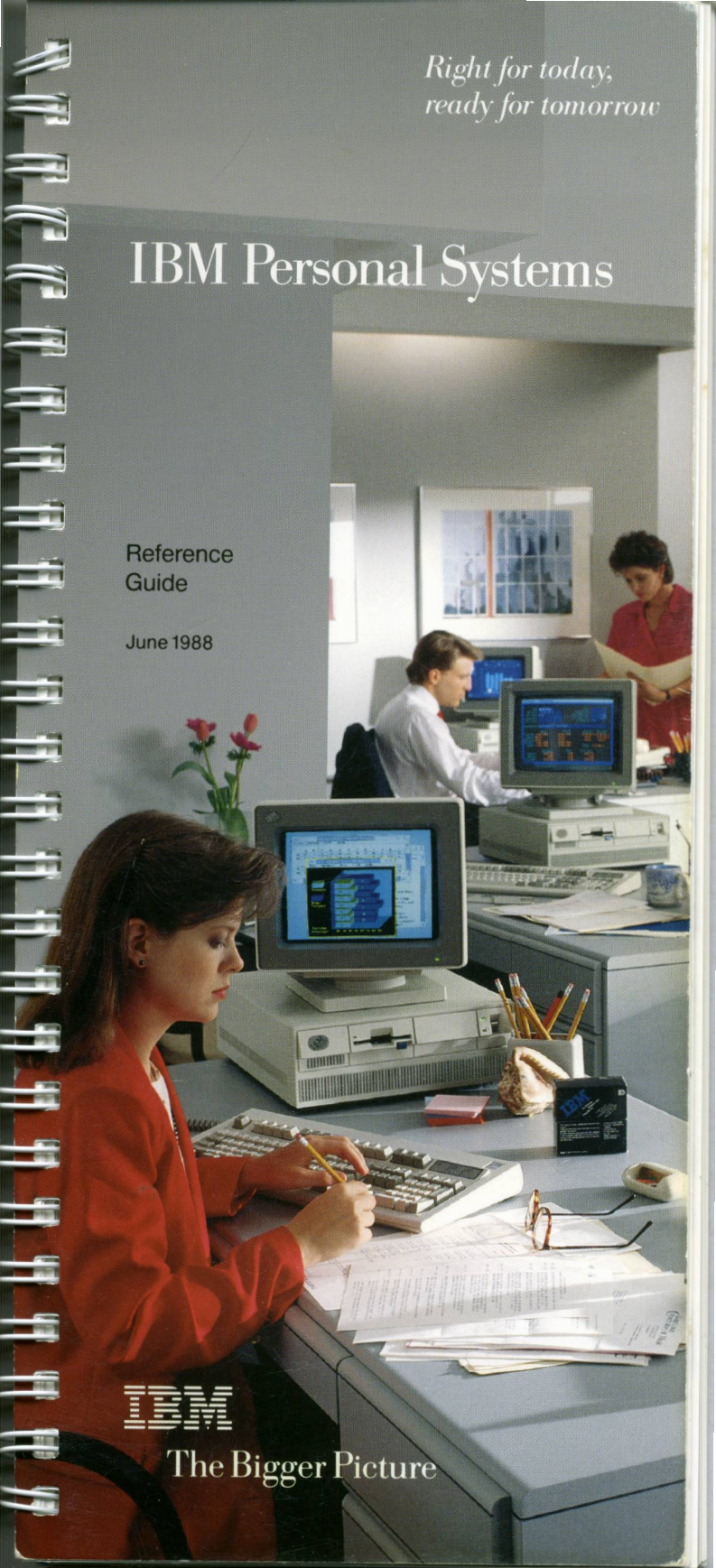
# IBM Personal Systems

Reference  
Guide

June 1988

**IBM**

The Bigger Picture



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## The Bigger Picture: Solutions from IBM

When it comes to choosing a personal computing system, you look for more than just the right hardware and software—you look for the company with the best solutions.

Look no further than IBM. We have the products, people and resources to meet your needs. They're all part of The Bigger Picture. And when you look at The Bigger Picture from IBM, we know you'll like the view.

To begin with, The Bigger Picture is partnership: your experts getting together with ours to plan the best strategies to support your business. Through partnerships like these, we've solved millions of problems for large and small businesses alike—and come up with innovative solutions second to none.

While we've been building solutions, we've established a reputation for quality that's tough to equal. Last year we introduced more than 1,100 new products, and we designed each to be more reliable than its predecessor.

That standard of excellence applies not only to our products but to our service, support and education, too. At IBM, we believe it's our commitment to these three aspects of The Bigger Picture that sets us apart in the industry. Our 28,000 service people make up the industry's largest and most automated service network. And our nationwide network of IBM Authorized Dealers is the best trained and most qualified in the industry. In the U.S., our customer engineers receive over one million hours of training every year. Our customers receive training, too. In fact, last year 150,000 customers took advantage of the 700 courses we offer.

These numbers are impressive. And they add up for you—from the moment your system is up and running.

But we don't stop there. We're ready to do more than support you today; we're ready to help you prepare for tomorrow. As you'll see in the following pages on IBM Personal System/2,<sup>®</sup> we offer solutions that last—so you can protect your investment in systems and software. We make all the right connections to help you build your networks for years to come. And in developing new technologies, we anticipate your future needs. That's why your future looks bright when you're part of The Bigger Picture.

## *Personal System/2: Setting the pace today and tomorrow*

To create Personal System/2, IBM took large-system technology and delivered it to desktops everywhere. As a result, the PS/2™ family sets the pace for faster, more efficient personal computing now and in the future.

This family helps make computing less complex, too. Because of their self-configuring capability, PS/2 models are simple to set up and expand. And they're extremely user-friendly, helping to promote greater productivity on the job.

While boosting productivity, Personal System/2 can also help lower expenses. That's because PS/2 models are built to stay up and running year after year. And this high reliability, supported by maintenance programs at minimal cost, leads to high levels of cost-effectiveness in owning and operating a PS/2.

### **The Personal System/2 price/performance advantage**

There are many reasons why Personal System/2 offers the best value for your money today plus a growth platform for tomorrow. For one, PS/2 models incorporate more integrated features on the system board: like a serial port, parallel port, graphics port, keyboard port, pointing device, clock/calendar and diskette controller. They also offer more powerful processors, Micro Channel™ architecture (on Models 50 through 80 386), and advanced graphics capabilities—all of which give you valuable returns on your investment.



That's not all. You get additional value from the Very Large-Scale Integration (VLSI) and Surface Mount Technology (SMT) used in these systems. VLSI and SMT reduce the number of separate PS/2 components, making Personal System/2 models lighter, quieter, more reliable and more compact. And they leave a lot more room for easy upgrade and expansion—up to 16MB of user memory on all Micro Channel models.

Price/performance is more than a matter of what's inside a Personal System/2. It's also how well it all works together. The balance among PS/2 processing power, memory, storage capacity and multitasking ability is exceptional. As a result, you can run a typical business program—or several programs—faster and more efficiently than ever before. And, because of faster co-processors, you can speed up engineering, mathematical and spreadsheet processing as well. Add to this the fast access time and data transfer performance inherent in PS/2 fixed disks, and you've struck the best possible balance between performance and price.

With IBM Operating System/2,<sup>™</sup> price/performance takes on an entirely new meaning—as your PS/2 takes on multiple jobs and handles them smoothly, all at once.

Perhaps the most important PS/2 price/performance advantage is measured by what IBM puts behind these systems. You get a one-year warranty and maintenance support options to keep your systems up and running.

## Personal System/2's great graphics

Personal System/2 offers a new generation of graphics technology and capability. The Video Graphics Array (VGA) or MultiColor Graphics Array (MCGA), built into the system board of every PS/2 computer, assures you of greater text and graphics clarity than ever—and leaves more room for optional internal expansion boards. Also, automatic display identification and color imaging—other benefits of VGA and MCGA—simplify application development and open up new application areas.

Even though PS/2 graphics are advanced, they're still compatible with earlier IBM graphics standards—helping to protect your previous software investments. What's more, over 50 independent software vendors have announced VGA compatibility—helping to ensure that current application standards continue.

Supporting Personal System/2's superior graphics technology are four superior PS/2 displays. They offer high-resolution text and graphics that are sharp and clear. And their etched-glass screens reduce glare, making them easier to read.

## Personal System/2's advanced technology

Inside and out, Personal System/2 models offer advanced technology and design. They're right for today, ready for tomorrow—in a number of major ways.

First there's Micro Channel architecture—perhaps PS/2's most valuable technological advancement over computers of the past. Previous computers were limited in their memory and processing speed, meeting only entry-level personal computing requirements. Now Micro Channel's high-performance technology offers a tremendous advantage—by allowing higher-end PS/2 computers to run multiple programs far more efficiently and reliably than their predecessors. In addition, Micro Channel architecture lays an invaluable foundation for expansion by equipping PS/2s to handle larger work loads than ever.

Second are IBM's VLSI and SMT—the two major reasons why PS/2 models are so reliable. In reducing the number of components, cables and interconnections necessary to run your computer, these technologies allow it to stay cooler and more efficient during extended operation. They also allow more standard features to be built into your system—which makes it smaller, simpler to connect, and easier to get up and running.

Third, the storage technology of Personal System/2 is also improved from earlier IBM PC models. Compact 3.5-inch diskettes give you up to eight times more storage space than 5.25-inch diskettes. The 3.5-inch diskettes' durable casing offers better protection of data, too. And the high-capacity fixed disks available for PS/2 models provide anywhere from 50 percent to as much as 600 percent more storage space than previous IBM PCs. In addition to more storage, the high-capacity PS/2 fixed disks transfer data up to two times faster than those on earlier IBM PC models.

## Personal System/2 communications

With Personal System/2, it's now easier than ever for you to connect and communicate with other systems. If you want to access the host in your office, pass news back and forth among other personal computers in your building, or send data through a modem to clients in another state, your PS/2 can help you do it fast.

That's especially true if you're using IBM Operating System/2 Extended Edition. This edition of OS/2™ contains an integrated Communications Manager that provides you with easy menus to access communications commands quickly. It also gives you the ability to handle several communications sessions simultaneously.



Even if you're not using Operating System/2, your PS/2 can work in your connected environment in a variety of important roles: as a workstation, network server or controlling gateway to host systems.

### **Personal System/2 quality and reliability**

In designing Personal System/2, IBM achieved outstanding levels of quality and reliability. For example, we used the advanced technology of electro-magnetic compatibility (EMC) hardening to make PS/2 computers less susceptible to noise or interference from electrical emissions in the physical environment. And we integrated advanced-design controllers for PS/2 fixed disks to enhance data integrity and processing performance in any environment.

This level of careful design is also seen in the consistent family appearance of the Personal System/2 line. Everything from displays and printers to the enhanced keyboard and up-front power switches are designed for maximum functionality and ease of use. And the PS/2's "tool-less" installation lets you set up and service your system quickly and easily.

### **Personal System/2: the platform for your growth and success**

Thanks to their efficient internal and external design, you can easily upgrade the capabilities of PS/2 computers by adding snap-in expansion boards and other optional components. And, with Micro Channel architecture, you can be sure that the expansion boards you add will operate together smoothly. This architecture is designed to support the capabilities you require—now and in the future.

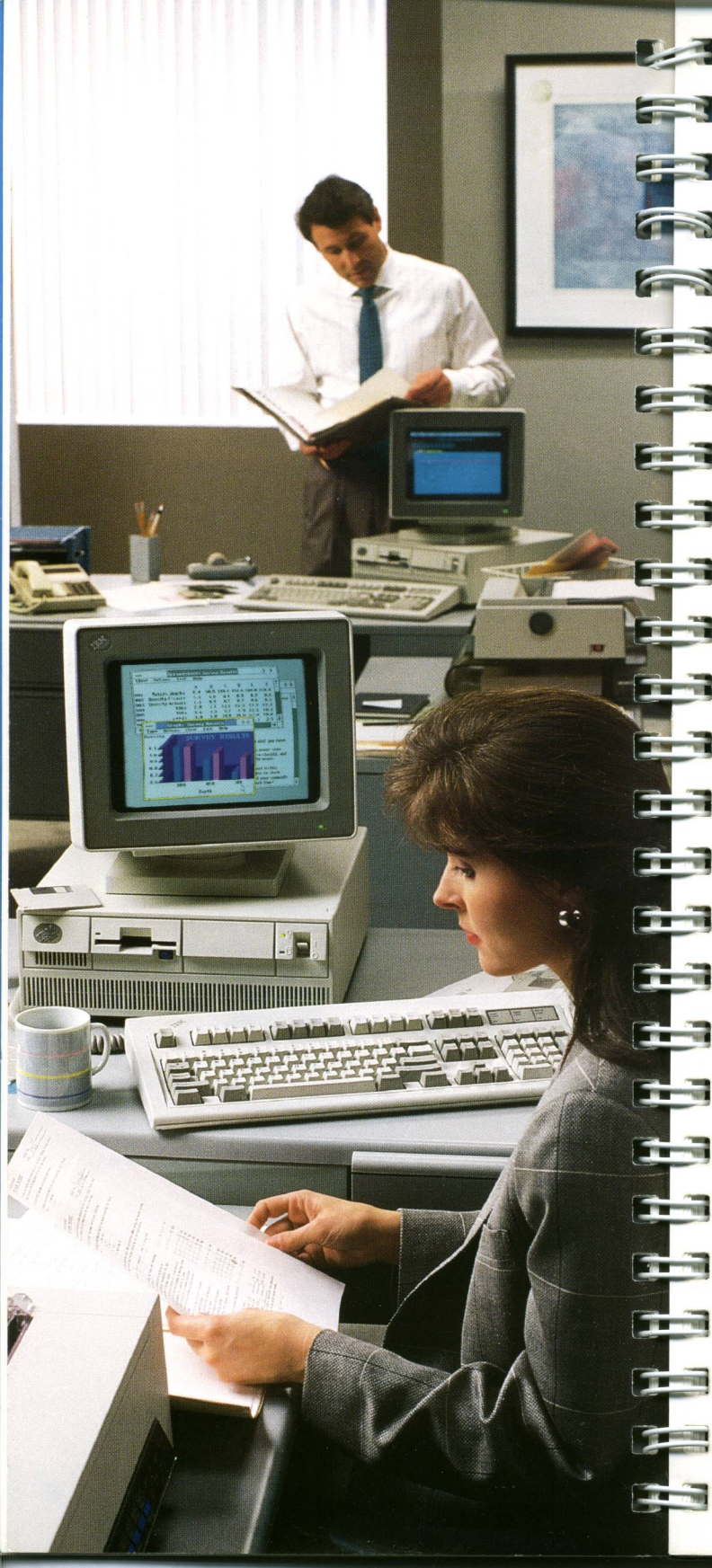
Even though PS/2s are prepared for the future, they still work with products of the past. In fact, their special compatibility BIOS helps you protect your previous programming investments by allowing smooth migration from IBM Personal Computers, Personal Computer XT<sup>™</sup>, and Personal Computer ATs<sup>®</sup>.

From compatibility to connectivity, state-of-the-art technology to user-friendly design, the Personal System/2 family has it all. These systems can meet your needs today—and serve as a window to tomorrow. So you can see more clearly all the possibilities for your company's growth and success.

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# Personal System/2

## Highlights

The Personal System/2 family includes four desktop models and two floor-standing models that, when combined with the IBM PC Convertible, offer a wide selection of solutions to meet your needs.

PS/2 Models 25 and 30 provide high levels of price/performance based on the traditional IBM PC architecture. Models 50 and 50 Z, 60, 70 386 and 80 386 incorporate Micro Channel architecture that offers faster, more efficient data flow and more direct memory access than earlier IBM PCs.

Whatever Personal System/2 you select, you'll benefit from superior design that distinguishes this family from the rest.

All PS/2 models feature up-front control and indicator lights. The power-on switch and system identification are up front for easy access, too. Also, PS/2 low-profile 3.5-inch diskette drives offer a single push-button diskette release mechanism for convenience in changing diskettes.

That's not all. The reduced size and weight of PS/2 models make them easy to accommodate in limited-space environments. And their low noise levels (up to 75 percent less than the IBM PC) help keep the work area quiet.

In combination with their minimal power consumption, the PS/2 models' compact, lightweight design results in proven reliability. And that reliability can pay off in lower maintenance costs for you.



<b>Machine numbers</b>	<p><i>IBM Space Saving Keyboard</i></p> <ul style="list-style-type: none"> <li>• 8525-001 (monochrome), -004 (color)</li> <li>• 8525-C02 (Collegiate monochrome), -C05 (Collegiate color)</li> </ul> <p><i>IBM PS/2 Enhanced Keyboard</i></p> <ul style="list-style-type: none"> <li>• 8525-G01 (monochrome), -G04 (color)</li> <li>• 8525-K02 (Collegiate monochrome), -K05 (Collegiate color)</li> <li>• 8525-L01 (LAN Station monochrome), -L04 (LAN Station color)</li> </ul>
<b>Processor</b>	<ul style="list-style-type: none"> <li>• 8086, 8 MHz</li> <li>• 8087 Math Co-Processor, 8 MHz (optional)</li> </ul>
<b>Wait states</b>	0
<b>Permanent memory (ROM)</b>	64KB standard
<b>Memory (RAM)</b>	<p><i>Models 25-001, -004, -G01, -G04</i> 512KB on the system board</p> <p><i>Models 25-C02, -C05, -K02, -K05, -L01, -L04</i> 640KB on the system board</p>
<b>Storage</b>	<p><i>Models 25-001, -004, -G01, -G04, -L01, -L04</i> One 720KB 3.5-inch diskette drive</p> <p><i>Models 25-C02, -C05, -K02, -K05</i> Two 720KB 3.5-inch diskette drives</p> <p><i>Optional</i></p> <ul style="list-style-type: none"> <li>• 20MB fixed disk drive</li> <li>• Second 720KB 3.5-inch diskette drive (Models 25-001, -004, -G01, -G04, -L01, -L04 only)</li> <li>• IBM 5.25" External Diskette Drive 4869-001</li> <li>• External 3363 Optical Disk Drive</li> </ul>
<b>Display</b>	<p><i>Models 25-001, -C02, -G01, -K02, -L01</i> 12" (diagonal measurement) analog monochrome display</p> <p><i>Models 25-004, -C05, -G04, -K05, -L04</i> 12" (diagonal measurement) analog color display</p>

<b>Video</b>	<p><i>MultiColor Graphics Array (MCGA)</i></p> <ul style="list-style-type: none"> <li>• 8 x 16 character box</li> <li>• 640 x 480 pels x 2 colors from more than 256K palette</li> <li>• 320 x 200 pels x 256 colors from more than 256K palette</li> <li>• 64KB video RAM</li> <li>• Analog display interface</li> </ul>
<b>Integrated functions</b>	<ul style="list-style-type: none"> <li>• Serial (up to 9.6Kbps—25-pin male)</li> <li>• Parallel (bidirectional—25-pin female)</li> <li>• Pointing device (for example, mouse; 6-pin module)</li> <li>• Keyboard (6-pin module)</li> <li>• Audio earphone connector</li> <li>• Diskette controller</li> </ul>
<b>Expansion</b>	<ul style="list-style-type: none"> <li>• One full-size expansion slot (except -L01, -L04)</li> <li>• One 8-inch expansion slot</li> </ul>
<b>Options</b>	<p>See <i>Personal System/2 attachment cards and options</i> (p. 99)</p> <p>(continued on page 16)</p>



## Personal System/2 Model 25

(continued)

<b>Size</b>	Height—15.38", Width—12.63", Depth—14.88", Weight—31 lbs. (monochrome unit), 36 lbs. (color unit); Space Saving Keyboard Width—15.86", Depth—7.5", Weight—4.28 lbs.
<b>Power supply</b>	90-watt (Models 25-001, -C02, -G01, -K02, -L01) or 115-watt (Models 25-004, -C05, -G04, -K05, -L04) worldwide;* manual voltage selection 90-137 VAC, 180-259 VAC; 50-60 Hz
<b>Collegiate Kit</b>	<p><i>Collegiate Models 8525-C02, -K02, -K05 and -C05 include:</i></p> <ul style="list-style-type: none"> <li>• DOS 3.30</li> <li>• Full Microsoft® Windows 1.04</li> <li>• Two load-and-go diskettes</li> <li>• Tutorial</li> <li>• Four blank diskettes</li> <li>• IBM PS/2 Mouse</li> </ul>
<b>LAN Station</b>	<p><i>Models 8525-L01 and -L04 include:</i></p> <ul style="list-style-type: none"> <li>• IBM Token-Ring Network PC Adapter installed in the full-size slot</li> <li>• IBM Token-Ring Network PC Adapter Diskette</li> </ul>

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\*Supplies power to both system and display.

## Personal System/2 Model 30

<b>Machine numbers</b>	8530-002, -021
<b>Processor</b>	<ul style="list-style-type: none"> <li>• 8086, 8 MHz</li> <li>• 8087 Math Co-Processor, 8 MHz (optional)</li> </ul>
<b>Wait states</b>	0
<b>Permanent memory (ROM)</b>	64KB standard
<b>Memory (RAM)</b>	640KB on the system board
<b>Storage</b>	<p><i>Model 30-002</i> Two 720KB 3.5-inch diskette drives</p> <p><i>Model 30-021</i> One 720KB 3.5-inch diskette drive and a 20MB fixed disk</p> <p><i>Optional</i></p> <ul style="list-style-type: none"> <li>• External 3363 Optical Disk Drive</li> <li>• 6157 Streaming Tape Drive</li> <li>• IBM 5.25" External Diskette Drive 4869-001</li> </ul>

(continued on page 18)





## Personal System/2 Model 30

(continued)

<b>Video</b>	<b>MultiColor Graphics Array (MCGA)</b> <ul style="list-style-type: none"><li>• 8 x 16 character box</li><li>• 640 x 480 pels x 2 colors from more than 256K palette</li><li>• 320 x 200 pels x 256 colors from more than 256K palette</li><li>• 64KB video RAM</li><li>• Analog display interface</li></ul>
<b>Integrated functions</b>	<ul style="list-style-type: none"><li>• Serial (up to 9.6Kbps—25-pin male)</li><li>• Parallel (bidirectional—25-pin female)</li><li>• Pointing device (for example, mouse; 6-pin module)</li><li>• Keyboard (6-pin module)</li><li>• Display (15-pin module)</li><li>• Diskette controller</li><li>• Disk controller (-021 only)</li><li>• Clock/calendar</li></ul>
<b>Expansion</b>	Three 8-bit expansion slots (which accept existing IBM PC cards)
<b>Options</b>	See <i>Personal System/2 attachment cards and options</i> (p. 99)
<b>Size</b>	Height—4", Width—16", Depth—15.6", Weight—17.5 lbs. (Model 30-002)
<b>Power supply</b>	70-watt worldwide; autosensing and autoswitching 100-125 VAC, 200-240 VAC; 50-60 Hz

## Personal System/2 Models 50 and 50 Z

<b>Machine numbers</b>	Model 50: 8550-021 Model 50 Z: 8550-031, -061
<b>Processor</b>	<ul style="list-style-type: none"><li>• 80286, 10 MHz</li><li>• 80287 Math Co-Processor, 10 MHz (optional)</li></ul>
<b>Wait states</b>	1 (-021) or 0 (-031, -061)
<b>Permanent memory (ROM)</b>	128KB standard
<b>Memory (RAM)</b>	<b>Model 50-021</b> <ul style="list-style-type: none"><li>• 1MB on the system board</li><li>• Expandable to 16MB (addressable) via adapter cards</li></ul> <b>Models 50-031, -061</b> <ul style="list-style-type: none"><li>• 1MB on the system board, expandable to 2MB</li><li>• Expandable to 16MB (addressable) via adapter cards</li></ul>

(continued on page 20)



Model 50 Z

## Storage

### Model 50-021

- One 1.44MB 3.5-inch diskette drive
- One 20MB fixed disk

### Model 50-031

- One 1.44MB 3.5-inch diskette drive
- One 30MB fixed disk

### Model 50-061

- One 1.44MB 3.5-inch diskette drive
- One 60MB fixed disk

### Optional

- Second 1.44MB 3.5-inch diskette drive
- 60MB fixed disk (-021, -031)
- External 3363 Optical Disk Drive
- 6157 Streaming Tape Drive
- IBM 5.25" External Diskette Drive 4869-001

## Video

### Video Graphics Array (VGA)

- 9 x 16 character box (720 x 400 text mode)
- 640 x 480 pels x 16 colors from more than 256K palette
- 320 x 200 pels x 256 colors from more than 256K palette
- 256KB video RAM
- Analog display interface

## Integrated functions

- Serial (up to 19.2Kbps—25-pin male)
- Parallel (bidirectional—25-pin female)
- Pointing device (for example, mouse; 6-pin module)
- Keyboard (6-pin module)
- Display (15-pin module)
- Diskette controller
- Disk controller adapter
- Clock/calendar

## Expansion

### Three expansion slots

- Two 16-bit expansion slots
- One 16-bit slot with video extension

## Options

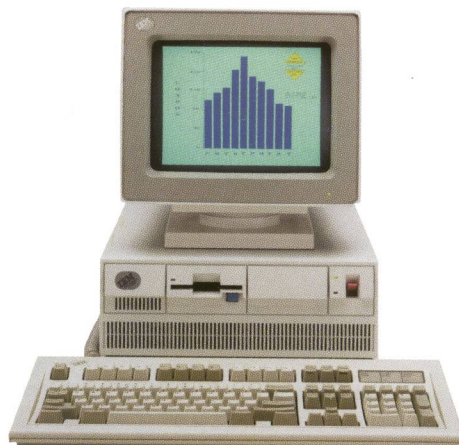
See *Personal System/2 attachment cards and options* (p. 99)

## Size

Height—5.5", Width—14.2",  
Depth—16.5", Weight—21 lbs.

## Power supply

94-watt worldwide; autosensing and autoswitching; 90-137 VAC, 180-265 VAC; 50-60 Hz



Model 50



<b>Machine numbers</b>	8560-041, -071
<b>Processor</b>	<ul style="list-style-type: none"> <li>• 80286, 10 MHz</li> <li>• 80287 Math Co-Processor, 10 MHz (optional)</li> </ul>
<b>Wait states</b>	1
<b>Permanent memory (ROM)</b>	128KB standard
<b>Memory (RAM)</b>	<ul style="list-style-type: none"> <li>• 1MB on the system board</li> <li>• Expandable to 16MB (addressable) via adapter cards</li> </ul>



<b>Storage</b>	<p><i>Model 60-041</i></p> <ul style="list-style-type: none"> <li>• One 1.44MB 3.5-inch diskette drive</li> <li>• One 44MB fixed disk</li> </ul> <p><i>Model 60-071</i></p> <ul style="list-style-type: none"> <li>• One 1.44MB 3.5-inch diskette drive</li> <li>• One 70MB fixed disk</li> </ul> <p><i>Optional</i></p> <ul style="list-style-type: none"> <li>• Second 1.44MB 3.5-inch diskette drive</li> <li>• Second fixed disk: 44MB (-041 only), 70MB or 115MB (-071 only)</li> <li>• Internal or external 3363 Optical Disk Drive</li> <li>• 6157 Streaming Tape Drive</li> <li>• IBM 5.25" External Diskette Drive 4869-001</li> </ul>
<b>Video</b>	<p><i>Video Graphics Array (VGA)</i></p> <ul style="list-style-type: none"> <li>• 9x16 character box (720x400 text mode)</li> <li>• 640 x 480 pels x 16 colors from more than 256K palette</li> <li>• 320 x 200 pels x 256 colors from more than 256K palette</li> <li>• 256KB video RAM</li> <li>• Analog display interface</li> </ul>
<b>Integrated functions</b>	<ul style="list-style-type: none"> <li>• Serial (up to 19.2Kbps—25-pin male)</li> <li>• Parallel (bidirectional—25-pin female)</li> <li>• Printing device (for example, mouse; 6-pin module)</li> <li>• Keyboard (6-pin module)</li> <li>• Display (15-pin module)</li> <li>• Diskette controller</li> <li>• Disk controller adapter: ST-506 (-041), Enhanced Small Device Interface (ESDI) (-071)</li> <li>• Clock/calendar</li> </ul>
<b>Expansion</b>	Seven 16-bit expansion slots
<b>Options</b>	See <i>Personal System/2 attachment cards and options</i> (p. 99)
<b>Size</b>	Height—23.5", Width—6.5", Depth—19", Weight—47 lbs.
<b>Power supply</b>	207-watt (-041) or 225-watt (-071) world-wide; autosensing and autoswitching 90-137 VAC, 180-265 VAC; 50-60 Hz

<b>Machine numbers</b>	8570-E61, -121, -A21
<b>Processor</b>	<p><i>Model 70-E61</i></p> <ul style="list-style-type: none"> <li>• 80386, 16 MHz</li> <li>• 80387 Math Co-Processor, 16 MHz (optional)</li> </ul> <p><i>Model 70-121</i></p> <ul style="list-style-type: none"> <li>• 80386, 20 MHz</li> <li>• 80387 Math Co-Processor, 20 MHz (optional)</li> </ul> <p><i>Model 70-A21</i></p> <ul style="list-style-type: none"> <li>• 80386, 25 MHz</li> <li>• 80387 Math Co-Processor, 25 MHz (optional)</li> </ul>
<b>Wait states</b>	0-2*
<b>Permanent memory (ROM)</b>	128KB standard
<b>Memory (RAM)</b>	<p><i>Model 70-E61</i></p> <ul style="list-style-type: none"> <li>• 1MB on the system board,** expandable to 6MB</li> <li>• Expandable to 16MB (addressable) via adapter cards</li> </ul> <p><i>Model 70-121</i></p> <ul style="list-style-type: none"> <li>• 2MB on the system board,** expandable to 6MB</li> <li>• Expandable to 16MB (addressable) via adapter cards</li> </ul> <p><i>Model 70-A21</i></p> <ul style="list-style-type: none"> <li>• 2MB on the system board,** expandable to 8MB</li> <li>• Expandable to 16MB (addressable) via adapter cards</li> <li>• Hardware memory cache: 64KB</li> </ul>

\*Except -A21 with 64KB of memory cache.

\*\*128KB of this memory is required for hardware system use.

## Storage

### *Model 70-E61*

- One 1.44MB 3.5-inch diskette drive
- One 60MB fixed disk

### *Models 70-121, -A21*

- One 1.44MB 3.5-inch diskette drive
- One 120MB fixed disk

### *Optional*

- Second 1.44MB 3.5-inch diskette drive
- External 3363 Optical Disk Drive
- 6157 Streaming Tape Drive
- IBM 5.25" External Diskette Drive 4869-001

## Video

### *Video Graphics Array (VGA)*

- 9 x 16 character box (720 x 400 text mode)
- 640 x 480 pels x 16 colors from more than 256K palette
- 320 x 200 pels x 256 colors from more than 256K palette
- 256KB video RAM
- Analog display interface

(continued on page 26)





## Personal System/2 Model 70 386

(continued)

### Integrated functions

- Serial (up to 19.2Kbps—25-pin male)
- Parallel (bidirectional—25-pin female)
- Pointing device (for example, mouse; 6-pin module)
- Keyboard (6-pin module)
- Display (15-pin module)
- Diskette controller
- Disk controller adapter: Enhanced Small Device Interface (ESDI)
- Clock/calendar

### Expansion

#### *Three expansion slots*

- Two 32-bit expansion slots
- One 16-bit slot with video extension

### Options

See *Personal System/2 attachment cards and options* (p. 99)

### Size

Height—5.5", Width—14.2",  
Depth—16.5", Weight—21 lbs.

### Power supply

132-watt worldwide; autosensing  
and autoswitching 100-125 VAC,  
200-240 VAC; 50-60 Hz

## Personal System/2 Model 80 386

### Machine numbers

8580-041, -071, -111, -311

### Processor

#### *Models 80-041, -071*

- 80386, 16 MHz
- 80387 Math Co-Processor, 16 MHz (optional)

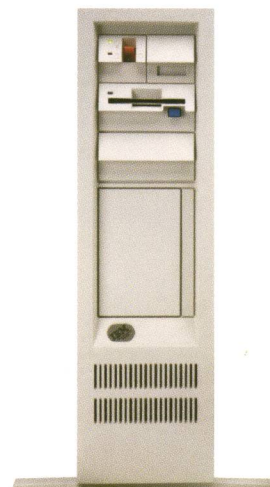
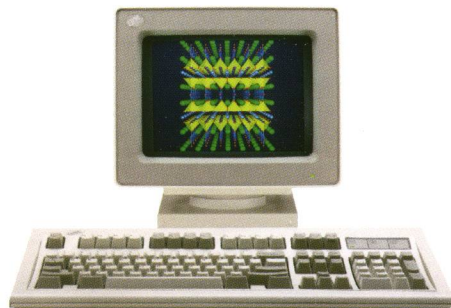
#### *Models 80-111, -311*

- 80386, 20 MHz
- 80387 Math Co-Processor, 20 MHz (optional)

### Wait states

1 (80-041, -071) or 0-2 (80-111, -311)

(continued on page 28)



## Personal System/2 Model 80 386

(continued)

<b>Permanent memory (ROM)</b>	128KB standard
<b>Memory (RAM)</b>	<p><i>Model 80-041</i></p> <ul style="list-style-type: none"><li>• 1MB on the system board, expandable to 2MB</li><li>• Expandable to 16MB via adapter cards</li></ul> <p><i>Models 80-071, -111, -311</i></p> <ul style="list-style-type: none"><li>• 2MB on the system board, expandable to 4MB (-111, -311)</li><li>• Expandable to 16MB (addressable) via adapter cards</li></ul>
<b>Storage</b>	<p><i>Model 80-041</i></p> <ul style="list-style-type: none"><li>• One 1.44MB 3.5-inch diskette drive</li><li>• One 44MB fixed disk</li></ul> <p><i>Model 80-071</i></p> <ul style="list-style-type: none"><li>• One 1.44MB 3.5-inch diskette drive</li><li>• One 70MB fixed disk</li></ul> <p><i>Model 80-111</i></p> <ul style="list-style-type: none"><li>• One 1.44MB 3.5-inch diskette drive</li><li>• One 115MB fixed disk</li></ul> <p><i>Model 80-311</i></p> <ul style="list-style-type: none"><li>• One 1.44MB 3.5-inch diskette drive</li><li>• One 314MB fixed disk</li></ul> <p><i>Optional</i></p> <ul style="list-style-type: none"><li>• Second 1.44MB 3.5-inch diskette drive</li><li>• Second fixed disk: 44MB (-041 only), 70MB, 115MB or 314MB (-071, -111, -311 only)</li><li>• Internal or external 3363 Optical Disk Drive</li><li>• 6157 Streaming Tape Drive</li><li>• IBM 5.25" External Diskette Drive 4869-001</li></ul>

<b>Video</b>	<p><i>Video Graphics Array (VGA)</i></p> <ul style="list-style-type: none"><li>• 9 x 16 character box (720 x 400 text mode)</li><li>• 640 x 480 pels x 16 colors from more than 256K palette</li><li>• 320 x 200 pels x 256 colors from more than 256K palette</li><li>• 256KB video RAM</li><li>• Analog display interface</li></ul>
<b>Integrated functions</b>	<ul style="list-style-type: none"><li>• Serial (up to 19.2Kbps—25-pin male)</li><li>• Parallel (bidirectional—25-pin female)</li><li>• Pointing device (for example, mouse; 6-pin module)</li><li>• Keyboard (6-pin module)</li><li>• Display (15-pin module)</li><li>• Diskette controller</li><li>• Disk controller adapter: ST-506 (-041), Enhanced Small Device Interface (ESDI) (-071, -111, -311)</li></ul>
<b>Expansion</b>	<p><i>Seven expansion slots</i></p> <ul style="list-style-type: none"><li>• Four 16-bit expansion slots</li><li>• Three 16/32-bit expansion slots</li></ul>
<b>Options</b>	<p>See <i>Personal System/2 attachment cards and options</i> (p. 99)</p>
<b>Size</b>	<p>Height—23.5", Width—6.5", Depth—19", Weight—52 lbs.</p>
<b>Power supply</b>	<p>207-watt (-041) or 225-watt (-071, -111, -311) worldwide; autosensing and autoswitching 100-125 VAC, 200-240 VAC; 50-60 Hz</p>



<b>Machine numbers</b>	5140-002, -022, -003
<b>Processor</b>	80C88, 4.77 MHz
<b>Wait states</b>	0
<b>Permanent memory (ROM)</b>	64KB standard
<b>Memory (RAM)</b>	256KB, expandable to 640KB
<b>Storage</b>	<i>PC Convertible -002, -022, -003</i> Two 720KB 3.5-inch diskette drives
<b>Video</b>	<ul style="list-style-type: none"> <li>Enhanced backlit removable liquid crystal display (-003)</li> <li>Enhanced removable liquid crystal display (-002, -022)</li> <li>Optional 5144 Monochrome Display or 5145 Color Display on all models</li> </ul>



<b>Size</b>	Height—2.64", Width—12.19", Depth—14.17", Weight—12.17 lbs. with battery pack
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## Highlights

### *Standard:*

- 5140 printer interface
- AC adapter
- Battery pack
- System software (-002)
- 78-key keyboard

### *Optional:*

- 5140 PC Convertible Printer
- Display adapter (for 5144 and 5145 displays)
- Serial/parallel adapter
- Enhanced internal modem; IBM or Attention (Hayes) command set compatible
- Battery charger
- Automobile power adapter
- Carrying case

# Displays

## Highlights

The PS/2 display family incorporates advanced technology that, when coupled with the graphics support integrated in every model of the PS/2 family and display adapters, provides a vast improvement in addressability and color capabilities.

Features common to the four IBM displays include:

### *Higher addressability*

### *Enhanced color/shading capability*

### *Clarity and quality*

- Double-scan 200-line modes
- 4:3 horizontal-to-vertical data area aspect ratio

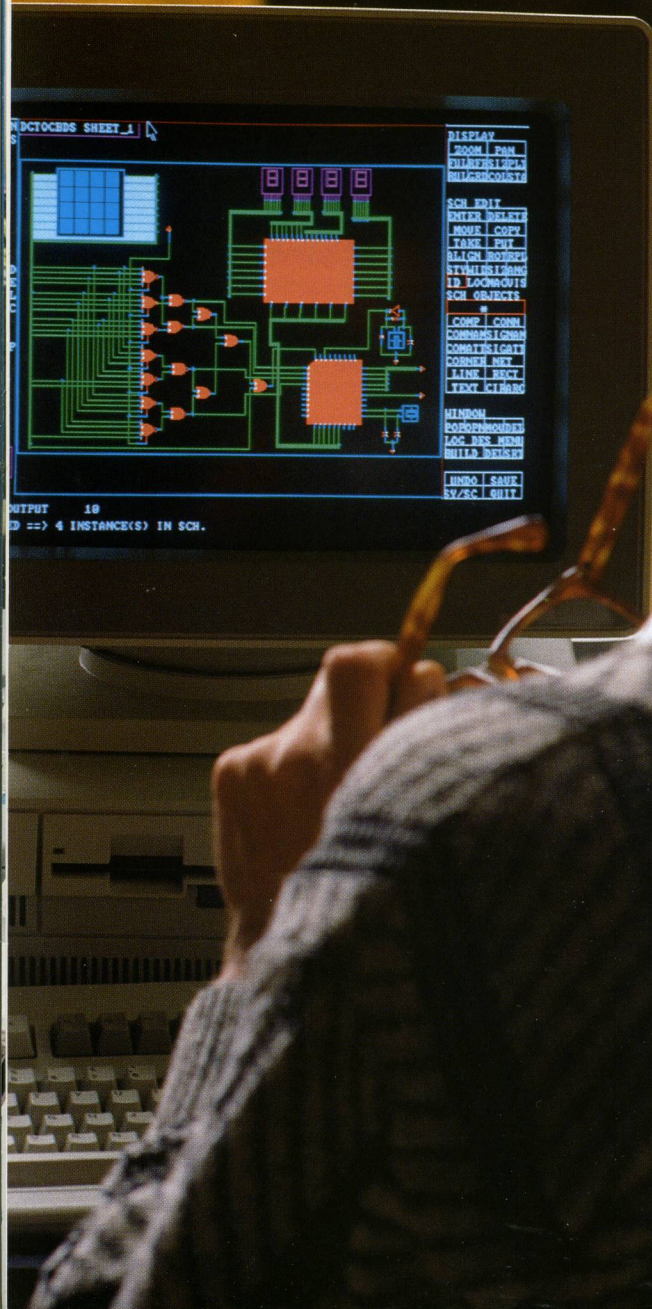
### *Common analog port*

- Personal System/2 family
- IBM PC family via IBM Personal System/2 Display Adapter

### *Automatic mode switching*

### *Analog display interface*

- A palette of more than 256,000 colors
- Improved performance





IBM Personal System/2  
Monochrome Display 8503

Input signal	Analog
Display size	12" (diagonal measurement)
Display type	Monochrome White on black or black on white
Palette	Up to 64 shades of gray
Addressability	<ul style="list-style-type: none"><li>• 720 x 400 text</li><li>• 640 x 480 graphics</li><li>• 320 x 200 graphics</li></ul>
Character size	<ul style="list-style-type: none"><li>• 8 x 16 character box text (MCGA)</li><li>• 9 x 16 character box text (VGA)</li></ul>
Speed	<ul style="list-style-type: none"><li>• 31.5 KHz horizontal scan frequency (all modes)</li><li>• Noninterlaced with up to 70 Hz vertical refresh rate</li></ul>



Attachability	<i>PS/2 Models 30 through 80 386</i> <ul style="list-style-type: none"><li>• IBM Personal System/2 Display Adapter<ul style="list-style-type: none"><li>Attachment to IBM PC, PC XT, XT/286, PC AT</li></ul></li><li>• IBM Personal System/2 Display Adapter 8514/A<ul style="list-style-type: none"><li>See <i>Personal System/2 attachment cards and options</i> (p. 99)</li></ul></li></ul>
Highlights	<ul style="list-style-type: none"><li>• Tilt-and-swivel stand standard</li><li>• 6-foot signal cable</li><li>• Reduced glare</li></ul>
Size	Height—12.4" (with stand), Width—12.6", Depth—12.2", Weight—18.8 lbs.

## IBM Personal System/2 Color Display 8512

<b>Input signal</b>	Analog
<b>Display size</b>	14" (diagonal measurement)
<b>Display type</b>	Color
<b>Palette</b>	256 out of more than 256K colors
<b>Addressability</b>	<ul style="list-style-type: none"> <li>• 720 x 400 text</li> <li>• 640 x 480 graphics</li> <li>• 320 x 200 graphics</li> </ul>
<b>Character size</b>	<ul style="list-style-type: none"> <li>• 8 x 16 character box text (MCGA)</li> <li>• 9 x 16 character box text (VGA)</li> </ul>
<b>Speed</b>	<ul style="list-style-type: none"> <li>• 31.5 KHz horizontal scan frequency (all modes)</li> <li>• Noninterlaced with up to 70 Hz vertical refresh rate</li> </ul>



<b>Attachability</b>	<p><i>PS/2 Models 30 through 80 386</i></p> <ul style="list-style-type: none"> <li>• IBM Personal System/2 Display Adapter <ul style="list-style-type: none"> <li>Attachment to IBM PC, PC XT, XT/286, PC AT</li> </ul> </li> <li>• IBM Personal System/2 Display Adapter 8514/A <ul style="list-style-type: none"> <li>See <i>Personal System/2 attachment cards and options</i> (p. 99)</li> </ul> </li> </ul>
<b>Highlights</b>	<ul style="list-style-type: none"> <li>• Tilt-and-swivel stand optional</li> <li>• 6-foot signal cable</li> <li>• Reduced glare</li> <li>• 0.41mm stripe format</li> </ul>
<b>Size</b>	Height—14.6" (with stand), Width—14", Depth—15.5", Weight—33 lbs.



## IBM Personal System/2 Color Display 8513

<b>Input signal</b>	Analog
<b>Display size</b>	12" (diagonal measurement)
<b>Display type</b>	Color
<b>Palette</b>	256 out of more than 256K colors
<b>Addressability</b>	<ul style="list-style-type: none"> <li>• 720 x 400 text</li> <li>• 640 x 480 graphics</li> <li>• 320 x 200 graphics</li> </ul>
<b>Character size</b>	<ul style="list-style-type: none"> <li>• 8 x 16 character box text (MCGA)</li> <li>• 9 x 16 character box text (VGA)</li> </ul>
<b>Speed</b>	<ul style="list-style-type: none"> <li>• 31.5 KHz horizontal scan frequency (all modes)</li> <li>• Noninterlaced with up to 70 Hz vertical refresh rate</li> </ul>



<b>Attachability</b>	<i>PS/2 Models 30 through 80 386</i> <ul style="list-style-type: none"> <li>• IBM Personal System/2 Display Adapter Attachment to IBM PC, PC XT, XT/286, PC AT</li> <li>• IBM Personal System/2 Display Adapter 8514/A <i>See Personal System/2 attachment cards and options (p. 99)</i></li> </ul>
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<b>Highlights</b>	<ul style="list-style-type: none"> <li>• Tilt-and-swivel stand standard</li> <li>• 6-foot signal cable</li> <li>• Reduced glare</li> <li>• 0.28mm dot phosphor pitch</li> </ul>
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<b>Size</b>	Height—12.3" (with stand), Width—12.6", Depth—14.5", Weight—23 lbs.
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## IBM Personal System/2 Color Display 8514

<b>Input signal</b>	Analog
<b>Display size</b>	16" (diagonal measurement)
<b>Display type</b>	Color
<b>Palette</b>	256 out of more than 256K colors
<b>Addressability</b>	<ul style="list-style-type: none"> <li>• 1,024 x 768 graphics*</li> <li>• All modes of the 8512 and 8513 displays</li> </ul>
<b>Character size</b>	<ul style="list-style-type: none"> <li>• 12 x 20 character box text (85 cols. x 38 rows)*</li> <li>• 7 x 15 character box text (146 cols. x 51 rows)*</li> </ul>
<b>Speed</b>	35.5 KHz horizontal scan frequency interlaced at 43.5 Hz vertical refresh rate*



<b>Attachability</b>	<p><i>PS/2 Models 30 through 80 386</i></p> <ul style="list-style-type: none"> <li>• IBM Personal System/2 Display Adapter Attachment to IBM PC, PC XT, XT/286, PC AT</li> <li>• IBM Personal System/2 Display Adapter 8514/A See <i>Personal System/2 attachment cards and options</i> (p. 99)</li> </ul>
<b>Highlights</b>	<ul style="list-style-type: none"> <li>• Up to 146 columns by 51 rows*</li> <li>• Tilt-and-swivel stand standard</li> <li>• 6-foot signal cable</li> <li>• Reduced glare</li> <li>• 0.31mm dot phosphor pitch</li> </ul>
<b>Size</b>	<p>Height—12.6" (with stand), Width—15.8", Depth—16.3", Weight—38.5 lbs.</p> <p><i>* Requires use of IBM Personal System/2 Display Adapter 8514/A at 1,024 x 768 screen resolution.</i></p>





## Highlights

# Printers

To provide the finishing touch to Personal System/2, IBM has enhanced and expanded its printer family.

The popular Proprinter™ family has been enhanced by the addition of two models that use 24-wire printhead technology for letter-quality printing at excellent print speeds.

The Quietwriter® family provides superior print quality and paper handling as well as nonimpact technology that helps eliminate noise in the workplace.

© Quietwriter is a registered trademark of International Business Machines Corporation.  
™ Proprinter is a trademark of International Business Machines Corporation.



## 4201 Proprinter II

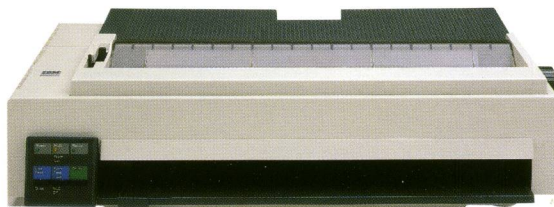
<b>Technology</b>	9-wire matrix
<b>Highlights</b>	<ul style="list-style-type: none"> <li>• Variable pitches (5, 6, 8.55, 10, 12, 17.1)</li> <li>• High-resolution APA graphics</li> <li>• Forms-load assist</li> <li>• Paper-tear assist</li> <li>• Programmable operator panel</li> </ul>
<b>Print speed</b>	<ul style="list-style-type: none"> <li>• 240 cps (DP Fastfont™)</li> <li>• 200 cps (DP normal)</li> <li>• 100 cps (emphasized)</li> <li>• 40 cps (near-letter-quality)</li> </ul>
<b>Paper handling</b>	<ul style="list-style-type: none"> <li>• Single-sheet feed (manual)</li> <li>• Envelope (manual)</li> <li>• Forms up to four parts</li> </ul>
<b>Carriage</b>	<p><i>Standard</i></p> <ul style="list-style-type: none"> <li>• 3-inch to 11-inch paper width for cut sheets</li> <li>• 3-inch to 10-inch paper width for continuous forms</li> <li>• 3-inch to 11-inch width for envelopes</li> </ul>
<b>Size</b>	Height—5.25", Width—16", Depth—13.5", Weight—17.5 lbs.

™ Fastfont is a trademark of International Business Machines Corporation.



## 4202 Proprinter XL

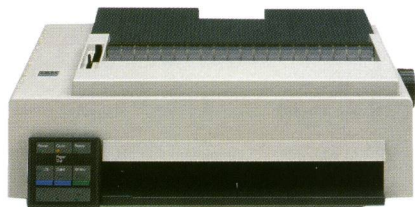
<b>Technology</b>	9-wire matrix
<b>Highlights</b>	<ul style="list-style-type: none"> <li>• Variable pitches (5, 6, 8.55, 10, 12, 17.1 and proportional)</li> <li>• 8KB print buffer</li> <li>• Near-letter-quality</li> <li>• APA graphics</li> <li>• Enhanced operator control panel</li> </ul>
<b>Print speed</b>	<ul style="list-style-type: none"> <li>• 200 cps (DP or draft mode)</li> <li>• 100 cps (emphasized mode)</li> <li>• 40 cps (near-letter-quality)</li> </ul>
<b>Paper handling</b>	<ul style="list-style-type: none"> <li>• Single-sheet feed (manual)</li> <li>• Envelope (manual)</li> <li>• Continuous-forms feed</li> </ul>
<b>Carriage</b>	<p><i>Wide</i></p> <ul style="list-style-type: none"> <li>• 3-inch to 16.5-inch paper width for cut sheets</li> <li>• 3-inch to 15-inch paper width for continuous forms</li> </ul>
<b>Size</b>	Height—5.4", Width—22", Depth—13.8", Weight—24 lbs.





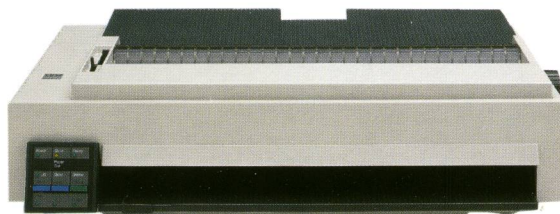
## 4207 Proprinter X24

<b>Technology</b>	24-wire matrix
<b>Highlights</b>	<ul style="list-style-type: none"><li>• Variable pitches (5, 6, 8.55, 10, 12, 17.1 and proportional)</li><li>• 6KB print buffer</li><li>• Letter-quality</li><li>• High-resolution APA graphics</li><li>• Enhanced operator control panel</li></ul>
<b>Print speed</b>	<ul style="list-style-type: none"><li>• 200-240 cps (draft)</li><li>• 67-80 cps (letter-quality)</li></ul>
<b>Paper handling</b>	<ul style="list-style-type: none"><li>• Single-sheet feed (manual)</li><li>• Continuous-forms feed</li><li>• Automatic sheet feed (optional)</li></ul>
<b>Carriage</b>	<i>Standard</i> <ul style="list-style-type: none"><li>• 3-inch to 11-inch paper width for cut sheets</li><li>• 3-inch to 10-inch paper width for continuous forms</li></ul>
<b>Size</b>	Height—5.25", Width—16", Depth—14.3", Weight—17.2 lbs.



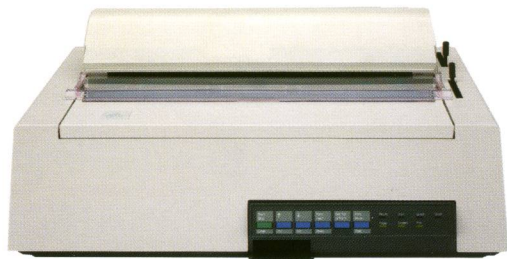
## 4208 Proprinter XL24

<b>Technology</b>	24-wire matrix
<b>Highlights</b>	<ul style="list-style-type: none"><li>• Variable pitches (5, 6, 8.55, 10, 12, 17.1 and proportional)</li><li>• 6KB print buffer</li><li>• Letter-quality</li><li>• High-resolution APA graphics</li><li>• Enhanced operator control panel</li></ul>
<b>Print speed</b>	<ul style="list-style-type: none"><li>• 200-240 cps (draft)</li><li>• 67-80 cps (letter-quality)</li></ul>
<b>Paper handling</b>	<ul style="list-style-type: none"><li>• Single-sheet feed (manual)</li><li>• Continuous-forms feed</li><li>• Automatic sheet feed (optional)</li></ul>
<b>Carriage</b>	<i>Wide</i> <ul style="list-style-type: none"><li>• 3-inch to 16.5-inch paper width for cut sheets</li><li>• 3-inch to 15-inch paper width for continuous forms</li></ul>
<b>Size</b>	Height—5.25", Width—22.6", Depth—14.3", Weight—22.6 lbs.



## 5201 Quietwriter Printer

<b>Technology</b>	Resistive ribbon thermal transfer
<b>Highlights</b>	<ul style="list-style-type: none"><li>• Nonimpact letter-quality printing</li><li>• Drop-ribbon cartridge</li><li>• APA graphics</li><li>• Two online selectable font cartridges</li></ul>
<b>Print speed</b>	• 40–60 cps
<b>Paper handling</b>	<ul style="list-style-type: none"><li>• Semiautomatic single-sheet paper feed</li><li>• Optional automatic single-drawer sheet feed</li><li>• Continuous-forms feed</li></ul>
<b>Carriage</b>	<i>Wide</i> <ul style="list-style-type: none"><li>• 3-inch to 15-inch paper width for cut sheets</li><li>• 2.5-inch to 14.5-inch continuous-forms paper width</li></ul>
<b>Size</b>	Height—8.5", Width—21.3", Depth—14.4", Weight—22 lbs.

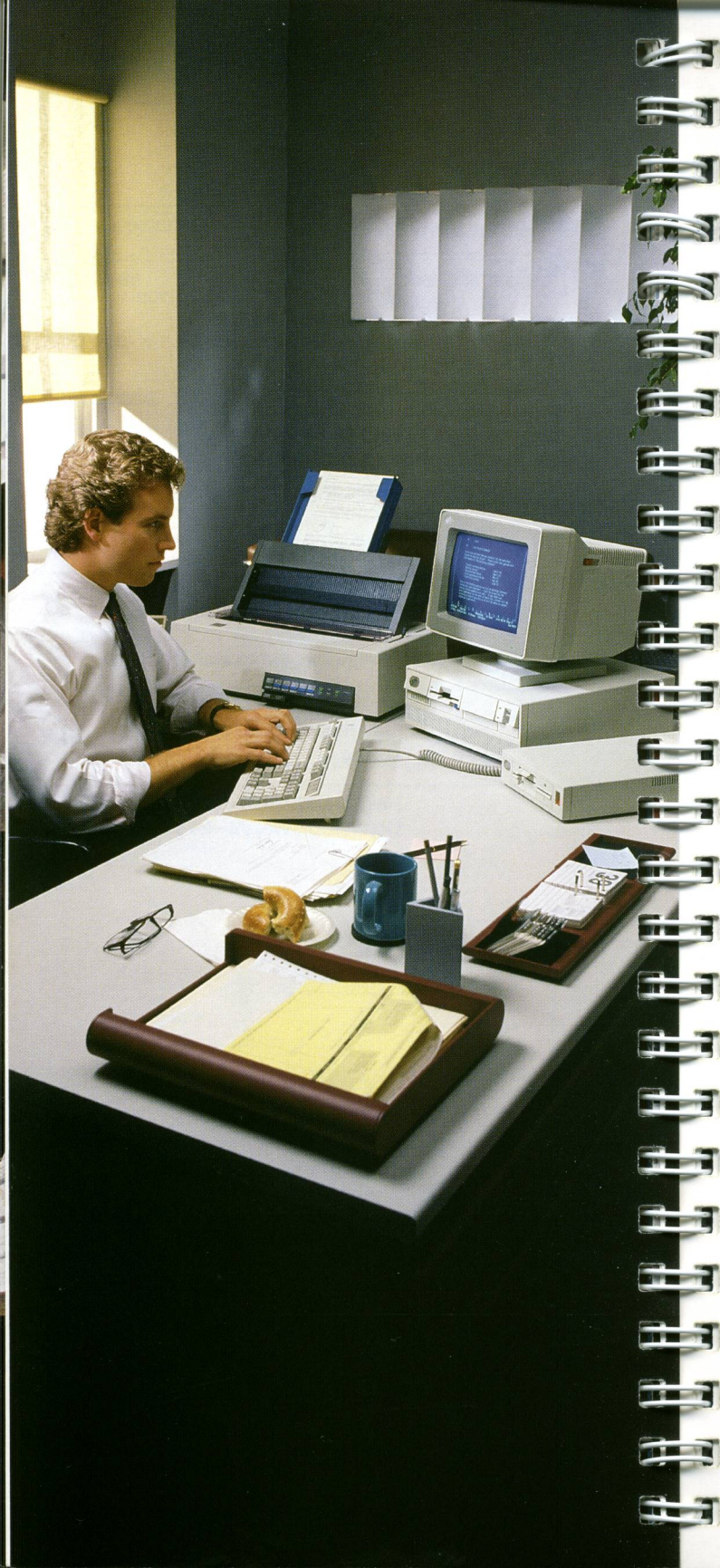


## 5202 Quietwriter III Printer

<b>Technology</b>	Resistive ribbon thermal transfer
<b>Highlights</b>	<ul style="list-style-type: none"><li>• Letter-quality</li><li>• High-resolution APA graphics</li><li>• Improved ribbon yield</li><li>• Up to eight fonts online</li></ul>
<b>Print speed</b>	<ul style="list-style-type: none"><li>• 160-274 cps (draft)</li><li>• 100-171 cps (letter-quality)</li><li>• 80-136 cps (enhanced)</li></ul>
<b>Paper handling</b>	<ul style="list-style-type: none"><li>• Single-sheet, semiautomatic insertion (friction)</li><li>• Adjustable single-bin sheet feed (optional)</li><li>• Dual-drawer sheet feed (optional)</li><li>• Envelope option (for use with dual-drawer sheet feed)</li><li>• Continuous-forms feed (optional)</li></ul>
<b>Carriage</b>	<i>Wide</i> 3-inch to 16.5-inch paper width for cut sheets
<b>Size</b>	Height—7.1", Width—21.7", Depth—15", Weight—24 lbs.







## Highlights

# Options

A variety of options is offered to support coexistence of the PS/2 and IBM PC product lines and to provide for smooth migration from PCs to PS/2s. These options include external diskette drives and a special data migration facility.

Other options expand the capabilities of PS/2 models and IBM PCs with functions ranging from optical data storage to synthesized sound.

Altogether, the wide selection of options for PS/2 makes this family of products more versatile than ever. So PS/2s are designed to keep pace with your changing needs.

### IBM Personal System/2 Data Migration Facility

<b>Description</b>	A low-cost, easy-to-use connecting tool for file transfers from an installed personal computer with a 5.25-inch diskette drive to a PS/2 model
<b>Operation</b>	<ul style="list-style-type: none"><li>• Via the printer cable on existing system and parallel port on a PS/2 model</li><li>• Unidirectional from IBM PC, PC XT, XT/286 or PC AT to any PS/2 model</li><li>• File transfer may be diskette to diskette, fixed disk to fixed disk, or any combination</li></ul>
<b>Product packaging</b>	<ul style="list-style-type: none"><li>• 5.25-inch diskette with a send program, the connector itself, and the appropriate instructions for use</li><li>• Receive program is included on the 3.5-inch starter diskette packaged with PS/2 Model 30 or the reference diskette packaged with PS/2 Models 50 through 80 386</li></ul>

### IBM Personal Computer 3.5" External Diskette Drive

<b>Description</b>	Diskette drive for IBM PCs that uses 720KB 3.5-inch software and data diskettes to enable sharing of data with PS/2 models or IBM PCs with 3.5-inch drives
<b>Benefits</b>	<ul style="list-style-type: none"><li>• Enhances and supports migration to PS/2</li><li>• Facilitates coexistence of 5.25-inch diskette-based systems with the PS/2</li></ul>

### IBM Personal System/2 5.25" External Diskette Drive Model 4869-001

<b>Description</b>	Diskette drive for PS/2 models that uses 360KB 5.25-inch software and data diskettes to enable sharing of data with 5.25-inch diskette-based IBM PCs
<b>Benefits</b>	<ul style="list-style-type: none"><li>• Enhances and supports gradual conversion to PS/2 technology</li><li>• Provides PS/2 models with immediate access to information stored on 5.25-inch media</li></ul>



### 3.5-inch diskettes

<b>Description</b>	<p>The primary removable storage media used in the Personal System/2 family</p> <ul style="list-style-type: none"> <li>• 1MB per diskette for PS/2 Models 25 and 30</li> <li>• 2MB per diskette for PS/2 Models 50 through 80 386</li> </ul>
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• Enhanced reliability; durable casing provides data protection</li> <li>• Increased storage capacity (2MB diskette)</li> <li>• Smaller size makes storage easier and simpler and reduces drive-size limitations</li> </ul>

### IBM 3363 Optical Disk Drive

<b>Description</b>	<p>A high-performance optical storage product that uses a 200MB write-once, removable cartridge about equal in size to a 5.25-inch diskette</p>
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• Enables storage of large amounts of data in a small package at a low cost</li> <li>• Expands online data storage; offloads data files</li> <li>• Provides mobility and security with removable cartridge</li> </ul>
<b>Models</b>	<ul style="list-style-type: none"> <li>• Model A01 (external): for IBM PC, PC XT, XT/286, PC AT, 3270 PC, 3270 PC AT, PS/2 Model 30</li> <li>• Model A11 (external): for PS/2 Models 50 through 80 386</li> <li>• Model B01 (external): for attachment to Model A01 or A11 or for use as an internal second drive</li> <li>• Feature 8700 (internal): for PS/2 Models 60 through 80 386</li> </ul>

\* For fixed disk options, see Personal System/2 attachment cards and options (p.99).

### IBM 6157 Streaming Tape Drive

<b>Description</b>	<p>An external, stand-alone tape drive unit to provide backup for fixed disks</p>
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• Allows fast, convenient save/restore and data interchange capabilities</li> <li>• Provides data security with removable cartridge</li> <li>• Enhances migration to PS/2</li> </ul>
<b>Hardware/software requirements</b>	<ul style="list-style-type: none"> <li>• SY-TOS/IBM Tape Utilities (SY-TOS) Version 2.0 menu-driven software</li> <li>• IBM 6157 Adapter Card</li> <li>• One 1/4-inch data cartridge (ANSI industry standard X3B5-83.71)</li> </ul>

**IBM Personal System/2  
2–8MB 80386 Memory  
Expansion Option**

**Highlights**

- Provides 2MB of high-speed (85ns) memory standard
- Supports up to three additional IBM 1MB or 2MB Memory Module Kits to provide a total 8MB of memory for each card

**Systems supported**

PS/2 Models 70 386, 80 386

**IBM Personal System/2  
80386 Memory Expansion  
Option**

**Highlights**

- Provides 2MB of high-speed (80ns) memory standard
- Supports up to two additional IBM 2MB Memory Expansion Kits to provide a total 6MB of memory for each card

**Systems supported**

PS/2 Models 70 386, 80 386

**IBM Personal System/2  
0–8MB Expanded Memory  
Adapter/A**

**Highlights**

- Provides up to 8MB of 120ns memory for each card
- Supports up to four IBM .5MB Memory Module Kits or four IBM 2MB Memory Module Kits
- Includes EMS 3.2 and XMA capability

**Systems supported**

PS/2 Models 50 and 50 Z, 60

**IBM Personal System/2  
80286 Memory Expansion  
Option**

**Highlights**

- Provides 512KB of memory standard
- Supports up to three additional IBM 512KB Memory Expansion Kits to provide a total 2MB of memory for each card

**Systems supported**

PS/2 Models 50 and 50 Z, 60

**IBM 2MB Expanded  
Memory Adapter**

**Highlights**

- Provides 2MB of expanded memory
- Requires and supports device drivers resident within the IBM 3270 Workstation Program Versions 1.0 and 1.1
- Supports up to six DOS applications and/or up to four host sessions concurrently
- Provides application programs with expanded memory support, an Expanded Memory Specification interface, and DOS Virtual Disk interfaces
- Includes parallel port

**Systems supported**

PC XT, PC AT, 3270 PC, 3270 PC AT, PS/2 Model 30 (XT/286 not supported)



## Memory expansion products

(continued)

### IBM Personal System/2 80286 Expanded Memory Adapter/A

#### Highlights

- Provides 2MB of expanded memory function
- Requires and supports device drivers resident within IBM 3270 Workstation Program, Versions 1.0 and 1.1
- Operates as contiguous memory with IBM OS/2 Standard and Extended Editions
- Supports up to six DOS applications and/or up to four host sessions concurrently
- Provides application programs with expanded memory support, an Expanded Memory Specification interface, and DOS Virtual Disk interfaces
- Includes parallel port

#### Systems supported

PS/2 Models 50 and 50 Z, 60

### IBM Personal System/2 Model 25 System Board 128KB Memory Expansion Kit

#### Highlights

- Provides 128KB RAM on the system board
- Increases system memory from 512KB to 640KB

#### System supported

PS/2 Model 25

## I/O attachment cards

### IBM Personal System/2 Display Adapter

#### Highlights

Analog display adapter

#### *Video Graphics Array*

Same functions as found on the system board of PS/2 Models 50 through 80 386

#### *Color summing*

- Color to monochrome (gray shading) conversion
- Automatic display type recognition

#### Systems supported

IBM PC, PC XT, XT/286, PC AT, PS/2 Model 30

### IBM Personal System/2 Display Adapter 8514/A

#### Highlights

- Advanced function analog display adapter
- Supports all Video Graphics Array modes
- Supports all four Personal System/2 displays

#### *Advanced function modes\**

- 640 x 480 pels
- 1,024 x 768 pels (using the 8514 Color Display)
- Advanced text and alphanumeric support (up to 146 cols. x 51 rows)
- BITBLT hardware for manipulating images and windows
- Hardware to assist drawing of lines and areas
- Up to 256 colors (or 64 shades of gray) out of a palette of 256K colors (IBM 8514 Memory Expansion Feature required for more than 16 colors)

#### Systems supported

PS/2 Models 50 through 80 386

*\*An adapter interface for easier programming is included.*

### IBM Personal System/2 3117 Adapter/A\*

**Highlights** Supports attachment of the IBM 3117 Scanner

**Systems supported** PS/2 Models 50 through 80 386

### IBM Personal System/2 High-Speed Adapter/A\*

**Highlights**

- Supports the attachment of the IBM 3118 Scanner and IBM 3117 Scanner with extension unit
- Provides RS422A interface with a 1Mbps data transmission rate

**Systems supported** PS/2 Models 50 through 80 386

*\*PS/2 Models 25 and 30 use the 3117 PC Adapter to attach IBM 3117 and 3118 Scanners.*

### IBM Music Feature

**Highlights**

- Stereo FM synthesized sound
- 336 instrument voices
- Eight notes may be played simultaneously
- Headphone connection for private listening
- MIDI interface
- Sound generation independent of system processor
- Amplified speakers or headphones required
- MIDI keyboard recommended

**Systems supported** IBM PC, PC XT, XT/286, PC AT and PS/2 Models 25 and 30

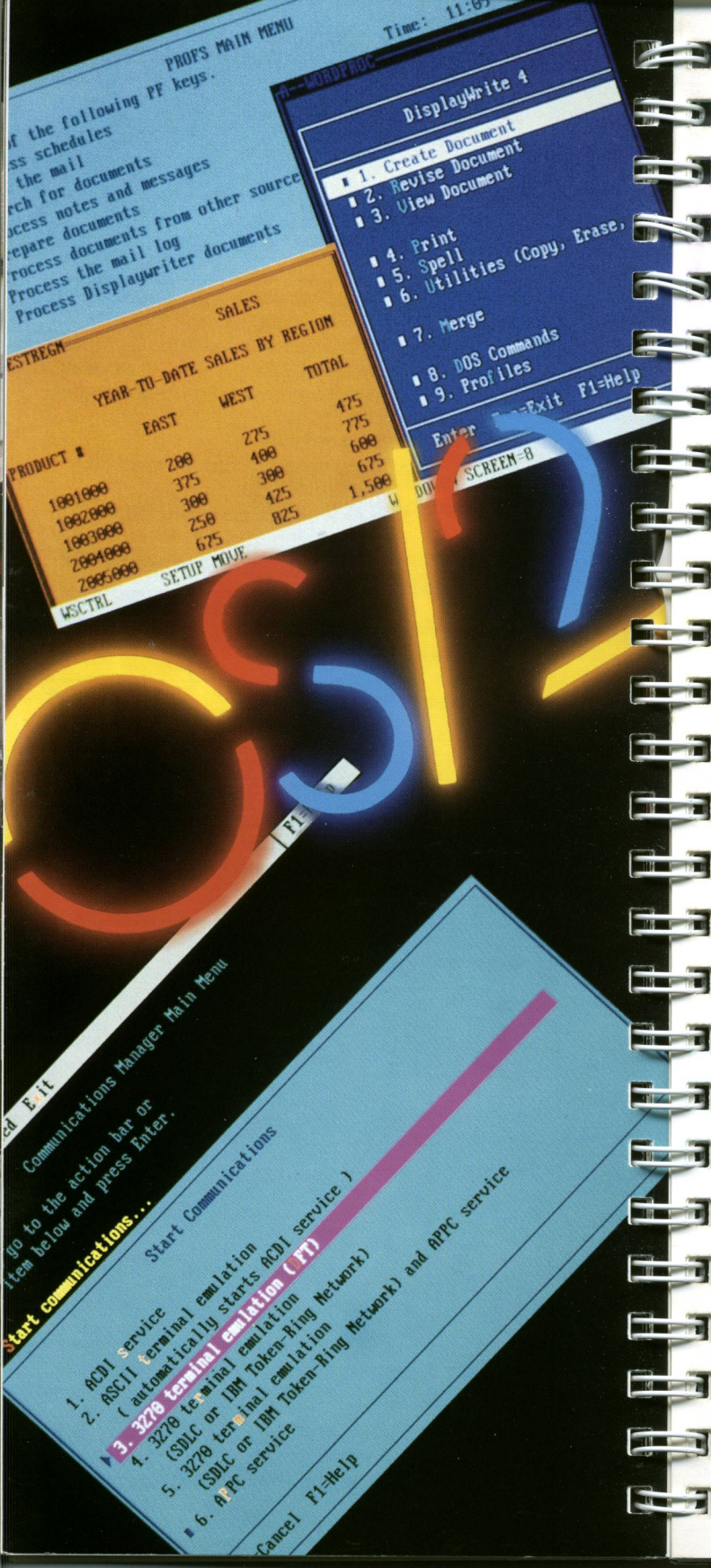
### IBM Personal System/2 Speech Adapter

**Highlights**

- Adds voice capability
- Required nonapplication-oriented software support is incorporated into an internal read-only memory (ROM) module

**Systems supported** PS/2 Models 25 and 30





# Software

## Highlights

IBM's software offerings provide new and higher levels of function plus greater ease of use. They also set the stage for smooth integration of systems and applications. Nowhere is this more apparent than in IBM Operating System/2—IBM's strategic operating system for Personal System/2.

OS/2 offers compatibility with DOS 3.30 as well as with IBM Local Area Network (LAN) and host communications software programs. And it allows you to use a wide selection of programming languages to build new applications in the OS/2 environment.



## IBM Operating System/2

IBM's announcement of Operating System/2 brought a new generation of operating systems to personal computing. This family of operating systems provides expanded application and user support allowing for the complete utilization of IBM 80286- and 80386-based (supported in 80286 mode) systems. The ability to handle larger programs and to process those programs concurrently represents one of the most significant advancements ever in personal computing. OS/2's high level of compatibility with DOS simplifies implementation and provides coexistence with DOS. OS/2 takes a step closer toward consistency with other IBM systems as the first participant in IBM Systems Application Architecture.

### IBM Operating System/2 Standard Edition Versions 1.0 and 1.1

This multitasking operating system breaks the 640KB memory barrier and provides the ability to run multiple applications concurrently. A Presentation Manager for graphics and windowing functions is incorporated in Version 1.1.

#### Highlights

##### *Operating system for IBM 80286- and 80386-based systems*

- 16MB memory addressability
- Multitasking
- Support for multiple 32MB disk partitions

##### *Participant in Systems Application Architecture (SAA)*

- User interface guidelines
- Enablers for application portability

##### *Enhanced usability*

- Graphics-based window facility (Version 1.1)
- Pop-up menus
- Contextual help

##### *IBM DOS Version 3.30 compatibility*

- Coexistence
- Migration aids

##### *High Level Language Application Program Interface (HLLAPI)*

- Compatibility with successive versions of OS/2
- Device independence

##### *OS/2 Presentation Manager*

- Provides window management, graphics support and ease-of-use features for OS/2 applications
- Implements the Common User Access (CUA) component of SAA and complements IBM's strategic host graphics offerings
- Provides a device-independent programming interface for application development
- Supports multiple output devices, graphics drawing and window management facilities, typographical fonts, raster operations and fast alpha-numeric text
- Available on Standard Edition Version 1.1 and Extended Edition Version 1.1

##### *Warranty and service plan*

- Three-month program warranty, including replacement, correction or refund
- Program services in place for 12 months from availability date



**IBM Operating System/2  
Standard Edition  
Programmer Toolkit  
Versions 1.0 and 1.1**

**Highlights**

- Toolkit functions that improve programmer productivity for creating OS/2 applications
- Tools for creating dynamic link libraries and applications
- Programming aids for IBM Macro Assembler/2 and IBM C/2
- Presentation interface tools to assist in screen generation in a graphic and windowing environment (Version 1.1 only)
- Utilities to allow the development of programs that will run interchangeably in either OS/2 or DOS environments

**IBM Operating System/2  
Extended Edition  
Versions 1.0 and 1.1**

This edition of OS/2 provides a Communications Manager component that supports a broad range of communications capabilities. It also offers a Database Manager component that supports the IBM relational data base model. In addition, it offers the operating function and, in Version 1.1, the Presentation Manager provided by Operating System/2 Standard Edition (Version 1.1).

**Highlights**

**Combined communications capabilities**

*Wide range of concurrent sessions*  
3270 Emulation, LANs, Asynchronous, X.25 and SNA LAN gateway support

*Concurrent multiple protocol support*

LU6.2, IBM 3270 data stream (LU2), Asynchronous links and X.25\*

*Concurrent emulation of multiple terminal types*

- IBM 3270, IBM 3101, DEC™VT100
- IBM 5250 Workstation Feature\*

*Communication and system management support*

*Programming interfaces (APPC, SRPI, ACDI, NETBIOS, IEEE 802.2, a 3270 program interface\*)*

**Built-in data base subsystem**

*Interactive query and report writing*

*Consistency with IBM family of relational data base products*

- IBM Database (DB2)
- Structured Query Language/Data System (SQL/DS)

*LAN support*

*Participant in Systems Application Architecture*

<sup>™</sup>DEC is a trademark of Digital Equipment Corporation.

\* Planned enhancement.

## IBM Disk Operating System Version 3.30

Since the introduction of the IBM Personal Computer, DOS has proven to be an operating system capable of supporting a wide range of end-user environments from personal productivity to education to specialized applications. Key to the acceptance of DOS has been the open architecture and the application compatibility that IBM has maintained. DOS Version 3.30 demonstrates IBM's continuing commitment to the DOS environment by the addition of function, the capability to run on the Personal System/2 family, and the continuation of its open architecture.

### Highlights

- Support for the IBM PC family
- Support for the PS/2 family
- DOS 3.20 compatibility
- Enhanced system commands
- Increased number of opened files
- Increased number of communications ports (four)
- Support for multiple 32MB disk partitions
- Base for enhanced connectivity
  - 3270 Communications family
  - IBM Local Area Network (LAN) products
- Base for 3270 Workstation Program enhanced function
- Support for 11 national languages
- Technical Reference Manual

## IBM 3270 Workstation Program Version 1.1

### Highlights

- IBM 3270 Personal Computer Control Program Version 3 function extended to selected IBM Personal Computers and the Personal System/2 family:
  - Multitasking
  - Up to four host sessions
  - Up to six DOS sessions
  - Up to two notepad sessions
- Expanded memory support (up to 2.25MB) with IBM 2MB Expanded Memory Adapter or IBM Personal System/2 80286 Expanded Memory Adapter/A
- Expanded Memory Specification support
- Virtual Disk support
- Windowing
- LAN support (Token-Ring and PC Network)
- Enhanced Connectivity Facilities support (SRPI)
- Additional display and graphics support
- Application Programming Interfaces (API) and High Level Language API (HLLAPI)
- Integrated host graphics (3270 PC)
- Host graphics (via GDDM-PCLK)
- Improved memory flexibility (over Version 1.0) in PS/2 and DOS session size and multiple Expanded Memory Specification sessions (Lotus®/Intel/Microsoft EMS)
- Support for the IBM 9370 Processor and the 3270 Communications Controller as Token-Ring gateways for host access, using IEEE/802.2 protocols
- Keyboard Definition Utility support for the Enhanced Keyboard when attached to the IBM PC XT and PC AT or to PS/2 Model 30, allowing users to move from one key to another to suit individual needs

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## Operating systems and related software

(continued)

### Systems supported

- PC XT; PC AT; 3270 PC; 3270 PC AT; PS/2 Models 30 through 80 386
- National Language Support

### IBM 3270 PC High Level Language Application Program Interface (HLLAPI) Version 3.1

### Highlights

- HLLAPI Version 3.1 is enhanced to include C language and National Language Support (previously announced and supported by IBM 3270 Workstation Program Version 1.0)
- Supports the 3270 Workstation Program Version 1.1

### Systems supported

PC XT; PC AT; 3270 PC; 3270 PC AT; PS/2 Models 30 through 80 386

### Advanced Interactive Executive Personal System/2 (AIX PS/2)

The AIX™ family of products provides effective UNIX® solutions for single users and entire enterprises alike. These products also provide powerful support for industry applications in government, education, engineering/science and technical/professional areas.

Many of the AIX features listed as highlights are available from IBM as separately priced offerings.

### Highlights

- IBM's UNIX operating environment for IBM 80386-based systems
- Member of the IBM AIX family of operating systems
  - Consistent implementation from PS/2 through 3090
  - Implements industry standards
- Support for up to 16 concurrent users
- 32-bit virtual memory addressing
- C, VS FORTRAN, VS Pascal languages
- Text and mail processing
- Windowing and graphics
- Support for multiple users of existing DOS applications
- Distributed data base management
- Powerful distributed processing
  - Single system image
  - Remote files and devices
  - Remote processes
- Token-Ring and Ethernet® LAN TCP/IP support
- Async and X.25 communications
- 3278/79 Emulation
- XENIX® migration
- National Language Support

<sup>™</sup> AIX is a trademark of International Business Machines Corporation.

<sup>®</sup> UNIX is a registered trademark of AT&T. Ethernet is a registered trademark of Xerox Corporation. XENIX is a registered trademark of Microsoft Corporation.

## IBM BASIC Compiler/2

### Highlights

- Operating systems
  - Operating System/2 Standard Edition Versions 1.0 and 1.1
  - DOS Version 3.30
- The IBM BASIC Compiler/2 and the compiled application programs it generates can run concurrently with other applications in the OS/2 multi-tasking environment
- Provides a common language interface that allows calling routines coded with the IBM C/2, the IBM Pascal Compiler/2, or the IBM Macro Assembler/2

## IBM FORTRAN/2

### Highlights

- Operating systems
  - Operating System/2 Standard Edition Versions 1.0 and 1.1
  - DOS Version 3.30
- The IBM FORTRAN/2 and the compiled application programs it generates can run concurrently with other applications in the OS/2 multitasking environment
- Functionally compatible with the IBM Professional FORTRAN Versions 1.0 and 1.3
- 1977 ANSI Standard
- Supports Math Co-Processor and Math Co-Processor emulation

## IBM Pascal Compiler/2

### Highlights

- Operating systems
  - Operating System/2 Standard Edition Versions 1.0 and 1.1
  - DOS Version 3.30
- The IBM Pascal Compiler/2 and the compiled application programs it generates can run concurrently with other applications in the OS/2 multi-tasking environment
- Functionally compatible with IBM Pascal Compiler Version 2.0
- Minimal recoding may be required
- Capability for a compiled Pascal program to load, execute and communicate with IBM C/2 language programs
- Capability for a compiled Pascal program to call programs written in IBM Macro Assembler/2 or IBM C/2 or to be called by programs written in IBM Macro Assembler/2, IBM C/2 or IBM BASIC Compiler/2



## IBM COBOL Version 2

### Highlights

- Operating systems
  - DOS Versions 3.20 and 3.30
- An early release of IBM COBOL/2
  - Registered licensees will be eligible to receive IBM COBOL/2 (complete product) when available
- An intermediate implementation of ANSI X3.23-1985 COBOL standard
- A high-level implementation of ANSI X3.23-1974 COBOL standard
- Contains source-compatible subsets of IBM VS COBOL II Release 2 and IBM OS/VS COBOL Release 2.4
- Source code is upwardly compatible with the IBM Personal Computer COBOL Compiler Version 1.0
- Provides access to DOS and BIOS functions
- Re-entrant compiler and compiler-generated code
- Supports multiple memory models

## IBM COBOL/2

### Highlights

- Operating systems
  - Operating System/2 Standard Edition Versions 1.0 and 1.1
  - DOS Version 3.30
- The IBM COBOL/2 and the compiled application programs it generates can run concurrently with other applications in the OS/2 multitasking environment
- Other functions are the same as those of IBM COBOL Version 2.0
- Participant in Systems Application Architecture
- Registered licensees of IBM COBOL Version 2.0 are eligible to receive the IBM COBOL/2 at no charge when available. See announcement for details.

## IBM C/2

### Highlights

- Operating systems
  - Operating System/2 Standard Edition Versions 1.0 and 1.1
  - DOS Version 3.30
- IBM C/2 and the compiled application programs it generates can run concurrently with other applications in the OS/2 multitasking environment
- Functional compatibility with IBM Personal Computer C Compiler Version 1.0
- Many additional features beyond those of IBM Personal Computer C Compiler Version 1.0
- Participant in Systems Application Architecture

## IBM Macro Assembler/2

### Highlights

- Operating systems
  - Operating System/2 Standard Edition Versions 1.0 and 1.1
  - DOS Version 3.30
- The IBM Macro Assembler/2 and the compiled application programs it generates can run concurrently with other applications in the OS/2 multitasking environment
- Function and source code compatibility with IBM Personal Computer Macro Assembler Version 2.0
- Object code files from IBM Personal Computer Macro Assembler Version 2.0 will link with object code files from IBM Macro Assembler/2
- Includes a library manager to facilitate the creation and maintenance of libraries
- Includes Structured Assembly Language Utilities

## IBM PC 3270 Emulation Program Entry Level Version 1.2

### Highlights

- Provides 3278/3279 Emulation for accessing System/370 host applications
- Minimal memory required (approximately 26KB)
- Dual task support
  - Simultaneous DOS program and host access
- Control unit terminal (CUT) mode attachment
- Entry Emulator High Level Language Application Program Interface (EEHLLAPI)
- Host graphics (via GDDM-PCLK)
- Enhanced Connectivity Facilities support (Version 1.2)
- National Language Support

### Systems supported

- IBM PC; PC XT; XT/286; PC AT; PS/2 Models 25 through 80 386

## IBM PC 3270 Emulation Program Version 3.0

### Highlights

- Wide variety of connectivity options
  - Single station communications support: 3278/3279/3287 Emulation via SDLC, 3X74 (BSC or SDLC), or Token-Ring
  - Local/remote LAN gateway and network station support: SDLC, 3X74 (BSC or SDLC), Token-Ring, PC Network
- Dual-tasking and auto-key function
- Host graphics (via GDDM-PCLK)
- Enhanced Connectivity Facilities support
- Host-initiated print

### Systems supported

- IBM PC; PC XT; XT/286; PC AT; PS/2 Models 25 through 80 386



### IBM Personal System/2 Graphics Workstation Program\*

#### Highlights

- Provides migration for applications from the IBM PC AT G and GX with Graphics Control Program Version 3.21 to PS/2 Models 50 through 80 386 under DOS 3.30
- Up to four concurrent interactive host graphics sessions and two notepad sessions
- Support for a range of graphics devices, including RS232 plotters, printers and a PS/2 Mouse
- Virtual disk support
- Graphics procedure interface supported by six language bindings (Assembler, COBOL, BASIC, FORTRAN, Pascal, C)
- 12-function HLLAPI subset support
- Enhanced Connectivity Facilities support (SRPI)
- LAN support (Token-Ring)
- Windowing
- Supports maximum available memory

### IBM 5520/Personal Computer Attachment Program Version 4.0

### IBM 5520 Personal System/2 Attachment Program Version 1.0

#### Highlights

- Allow IBM personal computers to operate as online 5253 terminals connected to an IBM 5520 system
- Provide keystroke capability to switch quickly between DOS and 5520 system applications
- Provide 3270 Emulation access capabilities to an IBM System/370 host connected via the IBM 5520 system

\* Requires use of IBM 8514 Display and 8514/A Display Adapter.

#### Systems supported

### 5520/Personal Computer Attachment Program Version 4.0

- IBM PC; PC XT; XT/286; XT 370; PC AT; PC 3270; Portable PC; PS/2 Models 25, 30

### 5520 Personal System/2 Attachment Program Version 1.0

- PS/2 Models 50 through 80 386

### IBM Enhanced 5250 Display Station Emulation Version 2.12

### Remote 5250 Emulation Program Version 2.0

#### Highlights

- Allow IBM personal computers to operate as online 5250 terminals connected to an IBM System/36 or System/38
- Provide "hot key" capability to switch quickly between DOS and System/36 or System/38 applications
- Permit two host sessions to be run at the same time
- Allow host applications to be printed out at the personal computer workstation
- Support workstation printers through Table Driven Printer processing
- Remote 5250 Emulation provides 5250 Emulation access capabilities to an IBM System/36 or System/38 by emulating the function of the IBM 5294 Remote Control Unit at speeds of up to 19,200 bps (PS/2 Models 50 and 50 Z, 70 386, 80 386)

#### Systems supported

### IBM Enhanced 5250 Display Station Emulation Version 2.12

- PS/2 Models 25, 30; IBM PC; PC XT; XT/286; PC AT; Portable PC

### Remote 5250 Emulation Program Version 2.0

- PS/2 Models 25 through 80 386; IBM PC; PC XT; XT/286; PC AT; Portable PC

### LAN adapters for the Personal System/2 family

- Token-Ring Network PC Adapter
- Token-Ring Network PC Adapter II
- Token-Ring Network Adapter II/A
- Token-Ring Network Trace and Performance Adapter II
- Token-Ring Network Trace and Performance Adapter II/A
- PC Network Adapter II
- PC Network Adapter II/A
- PC Network Baseband Adapter
- PC Network Baseband Adapter/A
- PC Network Adapter II Frequency 2
- PC Network Adapter II Frequency 3
- PC Network Adapter II/A Frequency 2
- PC Network Adapter II/A Frequency 3

### IBM Local Area Network Program Version 1.3

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#### Highlights

- Provides resource sharing of disks, files and printers for interconnected workstations on the IBM Token-Ring Network and PC Network
- Supports increased NETBIOS sessions (up to 254, depending on the LAN adapter and device driver)
- New levels of security, including user log-on with optional encrypted password
- Extended services provide enhancements to LAN resource definition and control, including a new application selector panel for customizing the user's view of the system
- Supported by OS/2 LAN Server Program
- Provides remote IDL support of DOS to PS/2 models equipped with a LAN adapter



### IBM Operating System/2 Local Area Network Server Version 1.0

#### Highlights

- Takes advantage of OS/2 Extended Edition functions
- Supports IBM Token-Ring Network and PC Network NETBIOS programming interface
- Allows resource sharing for files, printers and serial communication devices
- Allows simultaneous multiple network requests for maximum network efficiency
- Provides multiple security services to protect resources
- Offers extensive printer management capabilities with concurrent support for up to eight printers
- Remote program execution permits network users to run programs on the server machine

### IBM Local Area Network Manager Program Version 1.0

#### Highlights

- Manages an IBM Token-Ring Network or a broadband IBM PC Network
- Operates as an application of NetView/PC for central network management
- Monitors the network for station or media failure and configuration changes and notifies the operator of errors that require immediate attention (alerts)
- Logs network error and stores information to disk for further analysis and reporting
- Provides easy-to-use menus and operator commands to facilitate problem determination and error recovery

### IBM PC 3270 Emulation LAN Management Program Version 1.0

#### Highlights

- Provides small and remote LAN support
- Operates as resident code with the IBM 3270 Emulation Program
- Requires no additional dedicated resources
- Provides automatic alert forwarding to NetView host

### IBM Token-Ring Network Starter Kit

#### Highlights

- Simplified start-up for LAN pilot installations
- Upgrade for PS/2 family

### IBM Local Area Network Implementation Services

#### Highlights

*IBM SolutionPac™ offering providing services for*

- Design review
- System installation
- User training

™ SolutionPac is a trademark of International Business Machines Corporation.

## Graphics Development Toolkit Version 1.2

### Highlights

- Contains application programming interface for a device-independent graphics environment
- Eight additional Virtual Device Interface (VDI) device drivers
  - PS/2 integrated display adapter and PS/2 Display Adapter—640 x 480, 16 colors
  - PS/2 integrated display adapter and PS/2 Display Adapter—640 x 480, 2 colors
  - PS/2 integrated display adapter and PS/2 Display Adapter—320 x 200, 256 colors
  - PS/2 Model 30—640 x 480, 2 colors
  - PS/2 Model 30—320 x 200, 256 colors
  - Quietwriter III
  - 6180 Color Plotter
  - PS/2 Mouse
- Packaged with 5.25-inch and 3.5-inch diskettes

## IBM Operating System/2 Graphics Development Toolkit

### Highlights

- Powerful, flexible productivity tool for application developers writing graphics programs for OS/2
- Operates in and supports VDI application development for OS/2's multi-tasking and 16MB environment
- Software font support
- Additional vector drawing functions
- Improved text handling
- Device independence at source code level
- Minimal conversion effort for existing VDI applications

## GDDM-PCLK Version 1.0 and 1.1

### Highlights

- Together with the host GDDM-PCLK feature, enables a GDDM host application to link to the IBM PC, 3270 PC or PS/2 with the new or existing 3270 terminal emulator as a graphics terminal
- Supports most GDDM Version 2 functions, including windowing and image
- Display, print and plot to attached devices
- Simple transfer of Picture Interchange Format (PIF) to local file
- Interactive Chart Utility (ICU) and other GDDM applications run without change
- Requires a 3270 terminal emulator (IBM PC 3270 Emulation Program Entry Level Version 1.2, 3270 Display Station Emulation Program Version 3.0, or 3270 Workstation Program Version 1.1)

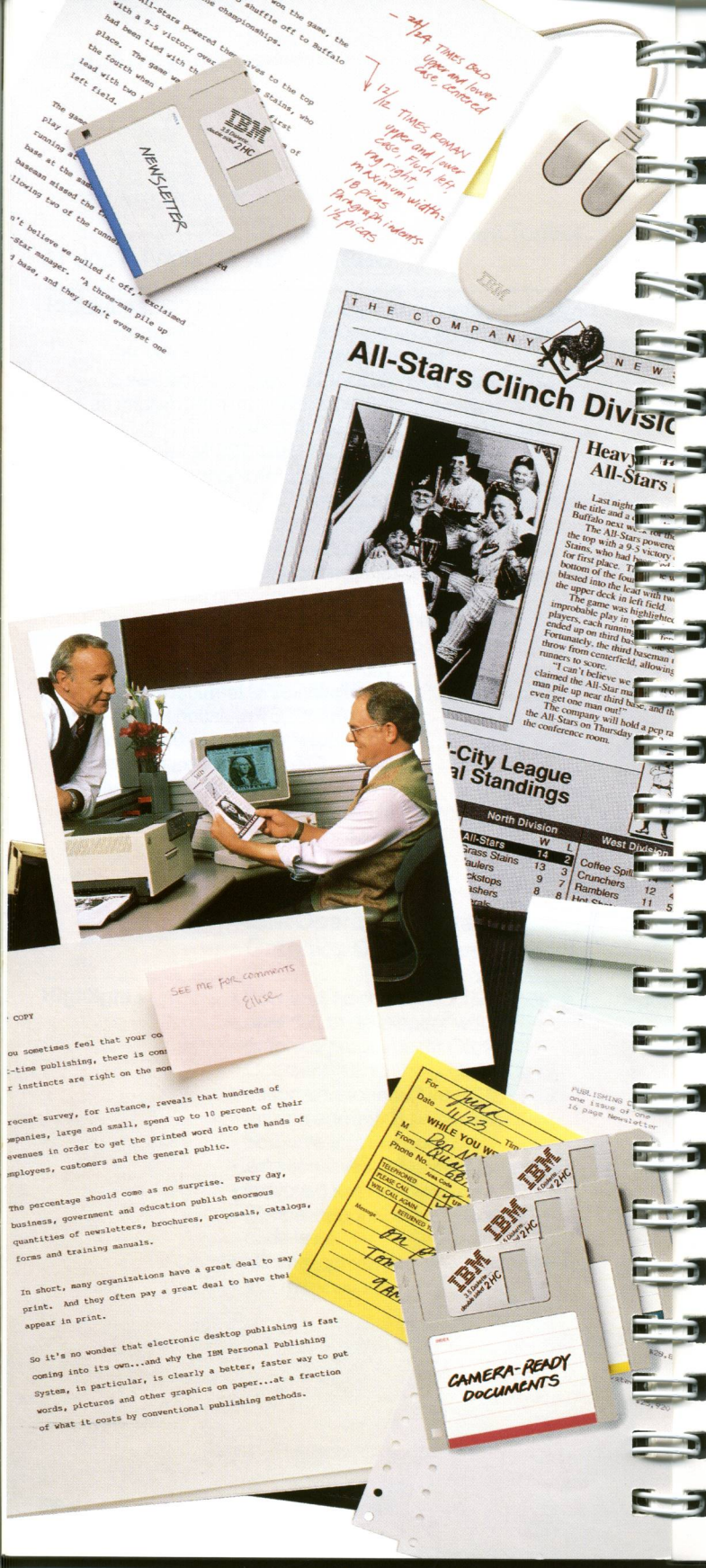


# SolutionPacs

## Highlights

IBM SolutionPacs address specific business needs. These integrated packages provide the right mix of products—software as well as hardware in some cases—to offer an immediate application solution.

SolutionPacs are available for such applications as accounting, computer-aided design and drafting, desktop publishing and personal typing.





## Personal Publishing System

### Highlights

*Fully integrated IBM PC system for document production and printing*

- High-quality, professional-looking documents that include text, graphics and image
- Flexible and rapid page layouts
- Multiple type styles and sizes

### Components

- PS/2 Models 30 or 80 386
- IBM monochrome or color display
- IBM Personal Pageprinter, Adapter and program
- IBM PS/2 Mouse
- DOS Version 3.30
- Aldus PageMaker™
- Microsoft Windows, Windows Write and Windows Paint

### Services

- One order number
- 800-number support
- Preloaded hard file
- Setup/start-up diskette
- Optional on-site setup support available from the IBM National Service Division

## Personal Publishing Options

### Highlights

Allow users to appropriately configure IBM PCs and PS/2 models to achieve the advantages of the Personal Publishing System.

## Additional IBM SolutionPacs

- Business Adviser Financial Accounting
- CADwrite Design and Drafting System
- Doctor's Office Management
- Legal Profession Series
- Construction Industry Series

™ PageMaker is a trademark of the Aldus Corporation.

# Product Summary

### Highlights

Altogether, Personal System/2, Operating System/2, DOS 3.30 and additional IBM operating systems can meet your current needs and support your plans for tomorrow.

Here are some of the advantages these products—and IBM—offer:

- Continued commitment to DOS
- Protection of investment in IBM personal computing applications
- Integration of 3270 and PC functions
- Smooth migration from DOS to OS/2—and from one edition of OS/2 to the next
- Micro Channel support for fast, efficient data flow and concurrent operations
- New levels of capability and function
- Platforms for strategic growth
- Total systems solutions



To facilitate coexistence of current IBM PCs with the Personal System/2 family and to provide a migration mechanism for those users who wish to replace current systems with the PS/2 family, IBM has introduced products and enhancements to the IBM PC family.

### Enhanced PC offerings

*OS/2 allows DOS users to coexist in the OS/2 environment*

- Data files are interchangeable
- DOS applications can run without alteration in the DOS environment of OS/2
- DOS applications can be recompiled to run as OS/2 protect applications
- DOS applications using 3270 emulation run in the OS/2 Extended environment
- OS/2 LAN Server function supports end users of both DOS and OS/2 Extended LAN Workstations

*Flexible DOS and OS/2 environment options*

- Option 1: two executable modules
  - DOS 3.30 level
  - OS/2 protect level
  - For stand-alone PCs and PS/2s
- Option 2: one executable module
  - Family mode level (requires Programmer Toolkit)
  - One copy of application for all users
  - For interconnected PCs and PS/2s
  - Facilitates application maintenance

IBM provides migration paths for DOS coexistence with OS/2 and gradual migration from DOS. Operating under DOS, users can take advantage of the enhanced function of OS/2 while preserving both the investment in the IBM PC family hardware as well as the investment in DOS and related software. These users can realize significant performance increases by running their existing applications on PS/2 systems today.

### Personal System/2

#### Model 25

- Application environments
  - Simple spreadsheets
  - Word processing
  - Education-Collegiate package
  - Entry-level LAN/host workstation
- Operating system
  - DOS
- Price/performance (vs. IBM PC)
  - 2.5 times faster
  - MCGA graphics
  - Reduced footprint

#### Model 30

- Application environments
  - Simple spreadsheets
  - Word processing
  - Entry-level LAN/host workstation
- Operating system
  - DOS
- Price/performance (vs. Model 25)
  - MCGA graphics
  - VGA level function via adapter card
  - Display flexibility
  - One additional expansion slot

#### Models 50 and 50 Z

- Application environments
  - Spreadsheets
  - Text processing
  - Concurrent communication sessions
  - Small business/commercial applications
- Operating systems
  - DOS
  - Operating System/2 Standard or Extended Edition
- Price/performance (vs. Model 30)
  - 80286 Processor
  - Micro Channel
  - Larger capacity/faster access disk
  - Up to 16MB memory capacity
  - VGA graphics
  - Multifunction terminal emulator

## Personal System/2 and operating system positioning

(continued)

### Model 60

- Application environments
  - Large spreadsheets
  - Desktop publishing
  - Small/medium network LAN server
  - Multiuser system/host
  - Integrated commercial/industry applications
- Operating systems
  - DOS
  - Operating System/2
- Price/performance (vs. Models 50 and 50 Z)
  - Larger fixed disk
  - Additional fixed disk expansion
  - Four additional expansion slots

### Model 70 386

- Application environments
  - Processor-intensive spreadsheets
  - Desktop publishing
  - Concurrent communication sessions
  - Multiuser system/host
  - Small business/commercial applications
  - Power users
- Operating systems
  - DOS
  - Operating System/2
  - AIX Personal System/2
- Price/performance (vs. Model 60)
  - 80386 Processor
  - Expanded system board memory capacity
  - Faster throughput

### Model 80 386

- Application environments
  - Processor-intensive spreadsheets
  - Composite desktop publishing
  - LAN server—medium/large networks
  - Multiuser system/host
  - Integrated commercial/industry applications
  - Power users
- Operating systems
  - DOS
  - Operating System/2
  - AIX Personal System/2
- Price/performance (vs. Model 70 386)
  - Larger fixed disk
  - Additional fixed disk expansion
  - Four additional expansion slots

## Operating Systems

### DOS Version 3.30

#### *Continued commitment to DOS users*

- Appropriate when memory requirements do not exceed 640KB
- Advanced feature support for the PS/2 family
- Enhanced performance characteristics
- Improved communications support
- Improved LAN support

#### *Helps to protect investments in DOS applications*

- Supports large application base
- Primary operating system for IBM 8088/8086 systems
- Runs on IBM PC family and PS/2 family

#### *Foundation for growth*

- Base for IBM 3270 Communications family
- Migration path to OS/2



## *Personal System/2 and operating system positioning*

(continued)

### **3270 Workstation Program**

#### *Integration of 3270 and PC functions*

- Functions with PC XT, PC AT and PS/2 family
- Support for the IBM 3270 PC
- Provides upgrade flexibility
- Follow-on to 3270 PC Control Program Version 3.0

#### *Provides advanced function support*

- Multiapplication processing
- Inter-session communications
- 3270 communications

#### *Bridge to Operating System/2 Extended Edition implementation*

- Communications and LAN support
- EEHLLAPI bridge to Operating System/2 Extended Edition
- Base for HLLAPI support

### **Operating System/2 Standard Edition Versions 1.0 and 1.1**

#### *Operating system for IBM 80286 and 80386 systems*

- 16MB memory addressability
- Multitasking/multiprogramming
- Graphics and windowing (Version 1.1)

#### *Migration path to Operating System/2 Extended Edition*

- Applications development
- Participation in Systems Application Architecture

#### *DOS compatibility*

- For existing DOS applications

### **Operating System/2 Extended Edition Versions 1.0 and 1.1**

#### *Strategic operating system for the total systems solution*

- Database Manager
- Communications Manager
- LAN support
- Participation in Systems Application Architecture
- Graphics and windowing (Version 1.1)

#### *Strategic for growth*

- Total systems approach
- IBM service and support

### **AIX Personal System/2**

#### *32-bit UNIX-based operating system for PS/2 Models 70 386 and 80 386*

- Multiuser capability
- Multitasking function
- Virtual memory support
- Up to 16 concurrent users
- Take advantage of industry solutions
  - Government
  - Education
  - Scientific/engineering
  - Technical/professional

# Quick Reference Charts

## PS/2 model comparisons

	PC Convertible	Personal System/2 Model		
		25	30	50
<b>Processor</b>				
Type	80C88	8086	8086	80286
Speed (MHz)	4.77	8	8	10
<b>Wait states</b>	0	0	0	1
<b>Permanent memory (ROM) (KB)</b>	64	64	64	128
<b>User memory (RAM)**</b>				
Standard	256KB	512KB	640KB	1MB
Maximum on system board	256KB	640KB	640KB	1MB
System maximum	640KB	640KB	640KB	16MB
<b>Integrated functions</b>				
Parallel/serial/ pointing device ports	N/A	Yes	Yes	Yes
Graphics port	N/A	MCGA	MCGA	VGA
Disk/diskette controller	Yes (diskette)	Yes	Yes	Yes
Clock/calendar	N/A	N/A	Yes	Yes
<b>Expansion slots (available)</b>	N/A	2†	3	3
<b>Operating systems</b>				
DOS 3.30	Yes	Yes	Yes	Yes
Operating System/2	No	No	No	Yes
AIX Personal System/2	No	No	No	No
<b>Diskette drives, 3.5-inch</b>				
Capacity	720KB	720KB	720KB	1.44MB
Quantity standard	2	1	2 (-002) 1 (-021)	1
<b>Fixed disk storage</b>				
Standard (MB)	N/A	N/A	20 (-021)	20
Maximum (MB)	N/A	20	20	60
<b>Related software</b>				
3270 Workstation	No	No	Yes	Yes

\* Except -A21 with 64KB of memory cache.

\*\* 128KB of this memory is reserved for hardware system use on Models 70 386, 80-111 and -311.

† One full-size, one 8-inch.

†† Compatibility test results forthcoming for Model 70-A21.



50	50 Z	60	70 386	80 386
80286 10	80286 10	80286 10	80386 16 (-E61), 20 (-121), 25 (-A21)	80386 16 (-041, -071), 20 (-111, -311)
1	0	1	0-2*	1 (-041, -071) 0-2 (-111, -311)
128	128	128	128	128
1MB	1MB	1MB	1MB (-E61) 2MB (-121, -A21)	1MB (-041) 2MB (-071, -111, -311)
1MB	2MB	1MB	6MB (-E61, -121) 8MB (-A21)	2MB (-041, -071) 4MB (-111, -311)
16MB	16MB	16MB	16MB	16MB
Yes VGA Yes Yes	Yes VGA Yes Yes	Yes VGA Yes Yes	Yes VGA Yes Yes	Yes VGA Yes Yes
3	3	7	3	7
Yes Yes No	Yes Yes No	Yes Yes No	Yes Yes Yes <sup>††</sup>	Yes Yes Yes
1.44MB 1	1.44MB 1	1.44MB 1	1.44MB 1	1.44MB 1
20	30 (-031) 60 (-061)	44 (-041) 70 (-071)	60 (-E61) 120 (-121, -A21)	44 (-041) 70 (-071) 115 (-111) 314 (-311)
60	60 (-031) 60 (-061)	88 (-041) 185 (-071)	60 (-E61) 120 (-121, -A21)	88 (-041) 384 (-071) 429 (-111) 628 (-311)
Yes	Yes	Yes	Yes <sup>††</sup>	Yes

## PS/2 standard storage features

		Personal System/2 Model						
	Access time	25	30	50	50 Z	60	70 386	80 386
3.5-inch diskette drive								
720KB		-001,-004,-G01,-G04,-L01,-L04	-021					
Two 720KB		-C02,-C05,-K02,-K05	-002					
1.44MB				-021	-031,-061	-041,-071	-E61,-121,-A21	-041,-071,-111,-311
3.5-inch fixed disk								
20MB	80ms		-021	-021				
30MB	39ms				-031			
60MB	27ms*				-061		-E61	
120MB	23ms*						-121,-A21	
5.25-inch fixed disk								
44MB	40ms					-041		-041
70MB	30ms*					-071		-071
115MB	28ms*							-111
314MB	23ms*							-311

\*ESDI controller with up to 10Mbps transfer rate.

All controllers are built into the system/disk drives and do not require an expansion slot. Controllers are ST-506 (unless indicated otherwise by \*) with data transfer rates of 5Mbps.

## Printer family comparisons

	Proprinter				Quietwriter	
	4201 II	4202 XL	4207 X24	4208 XL24	5201	5202 III
<b>Type quality</b>						
DP	•	•	•	•		
Near-letter	•	•				
Letter			•	•	•	•
APA graphics	•	•	•	•	•	•
<b>Other features</b>						
<b>Paper handling</b>						
Single sheet	•	•	•	•	•	•
Continuous	•	•	•	•	option	option
Auto sheet						
Single bin			option	option	option	option
Dual bin						option
<b>Auto envelopes</b>						
Wide carriage		•		•	•	•
Nonimpact					•	•



## PS/2 attachment cards and options\*

Device feature	Personal System/2 Model						
	25	30	50	50 Z	60	70 386	80 386
8087 Math Co-Processor	•	•					
80287 Math Co-Processor			•	•	•		
80387 Math Co-Processor						•	•
128KB Memory Expansion	•						
2MB Expanded Memory Adapter		•					
80286 Expanded Memory Adapter/A			•	•	•		
80286 Memory Expansion			•	•	•		
0-8MB Expanded Memory Adapter/A			•	•	•		
80386 Memory Expansion						•	•
2-8MB 80386 Memory Expansion						•	•
3.5-inch 720KB Diskette Drive	•						
3.5-inch 1.44MB Diskette Drive			•	•	•	•	•
5.25-inch 44MB Fixed Disk					•		•
3.5-inch 60MB Fixed Disk			•	•			
5.25-inch 70MB Fixed Disk					•		•
5.25-inch 115MB Fixed Disk					•		•
5.25-inch 314MB Fixed Disk							•
IBM 5.25" External Diskette Drive	•	•	•	•	•	•	•
PS/2 Data Migration Facility	•	•	•	•	•	•	•
6157 Tape Drive Adapter		•	•	•	•	•	•
8503 Monochrome Display		•	•	•	•	•	•
8512 Color Display		•	•	•	•	•	•
8513 Color Display		•	•	•	•	•	•
8514 Color Display		•	•	•	•	•	•
Display Adapter		•					
Display Adapter 8514/A			•	•	•	•	•
PS/2 Mouse	•	•	•	•	•	•	•
PC Music Feature	•	•					
PS/2 Speech Adapter	•	•					
Game Control Adapter	•	•					
PS/2 Collegiate Kit	•	•					
Serial/Parallel Adapter	•	•					
300/1200 Internal Modem/A			•	•	•	•	•
Multi-Protocol Adapter/A			•	•	•	•	•
Dual Async Adapter/A			•	•	•	•	•
BSC Communications Adapter	•	•					
SDLC Communications Adapter	•	•					
5250 Emulation Adapter	•	•					
5250 Emulation Adapter/A			•	•	•	•	•
3270 Emulation Adapter	•	•					
3270 Connection			•	•	•	•	•
IBM Display Station Emulation Adapter/A			•	•	•	•	•
PC Network Adapter II	•	•					
PC Network Adapter II/A			•	•	•	•	•
PC Network Baseband Adapter	•	•					
PC Network Baseband Adapter/A			•	•	•	•	•
PC Network Adapter II Frequency 2	•	•					
PC Network Adapter II Frequency 3	•	•					
PC Network Adapter II/A Frequency 2			•	•	•	•	•
PC Network Adapter II/A Frequency 3			•	•	•	•	•
Token-Ring Network PC Adapter	•	•					
Token-Ring Network PC Adapter II	•	•					
Token-Ring Network Adapter/A			•	•	•	•	•
Token-Ring Network Trace and Performance Adapter II	•	•					
Token-Ring Network Trace and Performance Adapter II/A			•	•	•	•	•

\* Compatibility test results forthcoming for all options from the 300/1200 Internal Modem/A to the end of the list on Model 70-A21.  
Additional cards and options are available—consult your IBM marketing representative or IBM Authorized Dealer.

## PS/2 performance and capacity improvements over IBM PC predecessors

The table below provides approximate enhanced performance and capacity ratios of PS/2 models over their IBM Personal Computer predecessors. The "x" in table entries means "times higher" for performance ratios; "times as much" in the case of standard memory and diskette and fixed disk capacities.

Personal System/2	IBM PC predecessor	Performance ratio*	Standard memory	Standard diskette capacity	Standard fixed disk capacity
Model 80 386 (20 MHz)	PC AT (339)	up to 5.9x	4.0x	1.2x	3.8-10.5x
Model 80 386 (16 MHz)	PC AT (339)	up to 4.9x	2.0-4.0x	1.2x	1.5-2.3x
Model 70 386 (20 MHz)	PC AT (339)	up to 5.7x	2.0-4.0x	1.2x	2.0-3.0x
Model 60 (10 MHz)	PC AT (339)	up to 2.0x	2.0x	1.2x	1.5-2.3x
Model 50 Z (10 MHz)	PC AT (339)	up to 3.5x	2.0x	1.2x	1.0-2.0x
Model 50 (10 MHz)	PC AT (339)	up to 2.0x	2.0x	1.2x	0.7x
Model 30-021 (8 MHz)	PC XT (089)	up to 2.5x**	1.0x	2.0x	1.0x
Model 25 (8 MHz)	PC	up to 2.4x**	2.5x	2.0x	N/A

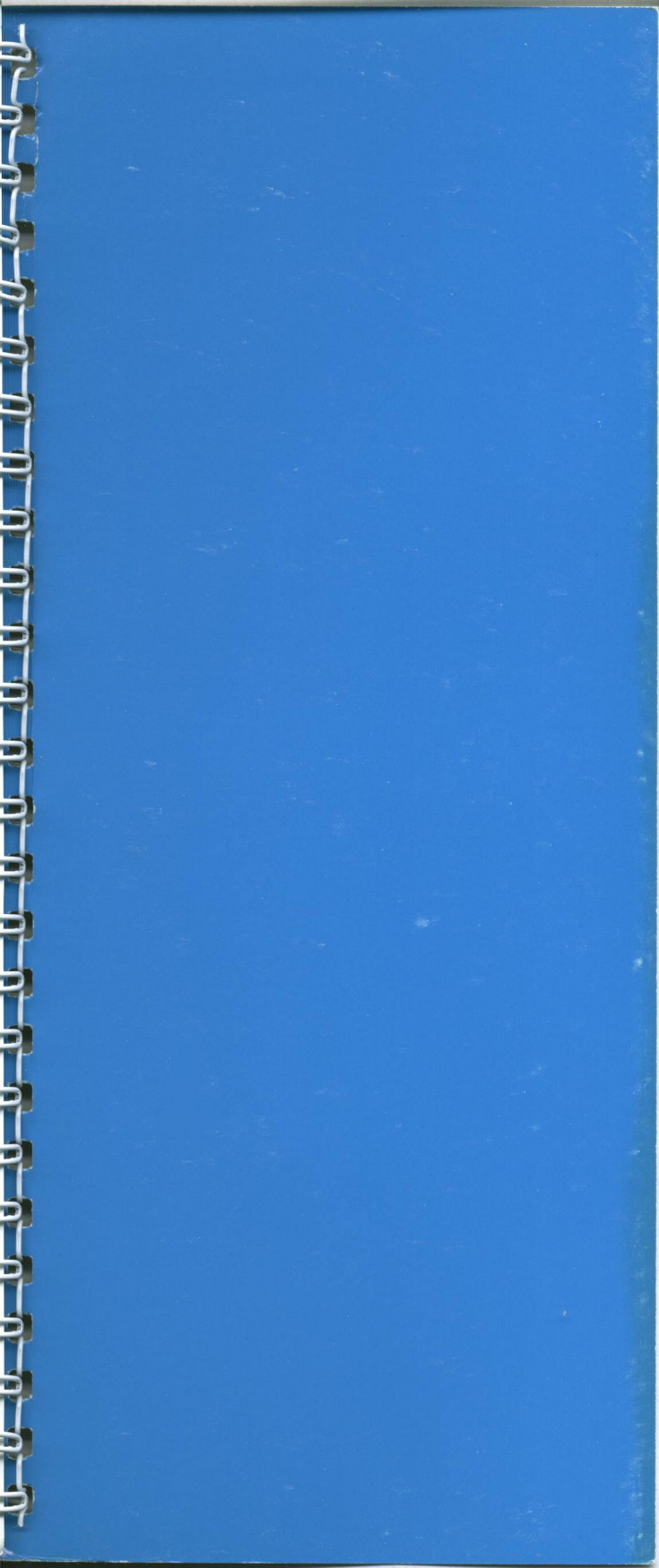
\* These tests were conducted independently by National Software Testing Laboratory. The results were based on the execution time for seven jobs: text (word processing), graphics, spreadsheet, business applications, engineering/scientific computations, and data base applications. This information is based on the testing described in the PS/2 performance guide. Your results may vary. For details, contact your IBM marketing representative or an IBM Authorized Dealer.

\*\* Tests for Models 25 and 30 were conducted by IBM.

## Communications software comparisons

	3270 Entry Level	3270 Emulation	3270 Work-station	PS/2 Graphics Work-station
	V. 1.2	V. 3.0	V. 1.1	
3278/3279 emulation	•	•	•	•
3287 printer emulation		•		
3274/3174 coax attachment	•	•	•	•
3725/3174 Token-Ring gateway		•	•	
PC LAN gateway		•		
LAN compatible		•	•	•
SDLC line attachment		•		
Number of host display sessions	1	1	4	4
Number of PC sessions	1	1	6	1
Number of notepad sessions			2	2
Graphics procedure I/F support				•
HLLAPI	entry		•	•
Presentation space API (ECF) SRPI	•	subset	•	•
Concurrent processing			•	•
XMA support			•	N/A
<b>Host graphics:</b>				
• Full				•
• GDDM-PCLK	•	•	•	N/A
• Integrated			3270 PC	
Graphics devices (RS232 plotters, printers, mouse)				•
IBM PC, XT/286	•	•		
PC XT, PC AT	•	•	•	•
Model 25	•	•		
Model 30	•	•	•	•
Models 50 and 50 Z, 60	•		•	•
Models 70 386, 80 386	•			•
3270 PC, 3270 PC AT		•	•	





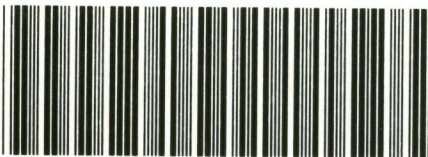


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